

VOL. XLV. No. 12

DECEMBER 1960

# MECCANO

## MAGAZINE



SWISS AERIAL RAILWAY

15c



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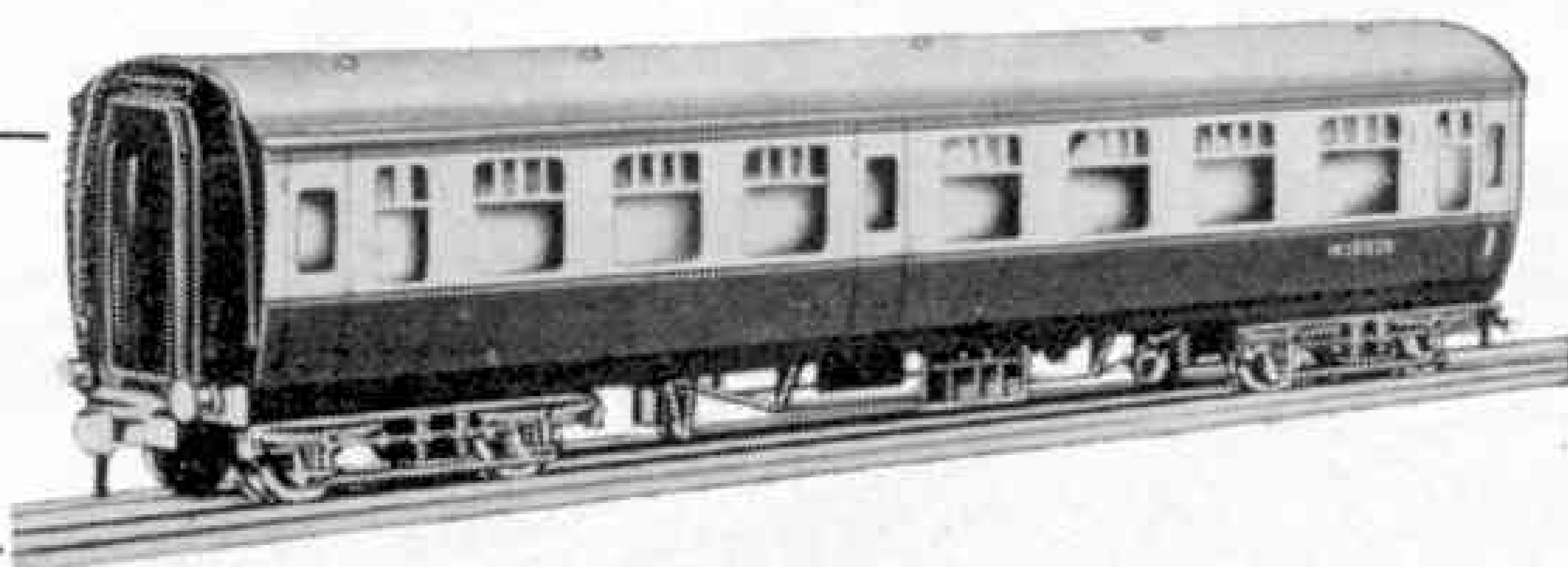
# HORNBY DUBLO COACHES

**NEW**

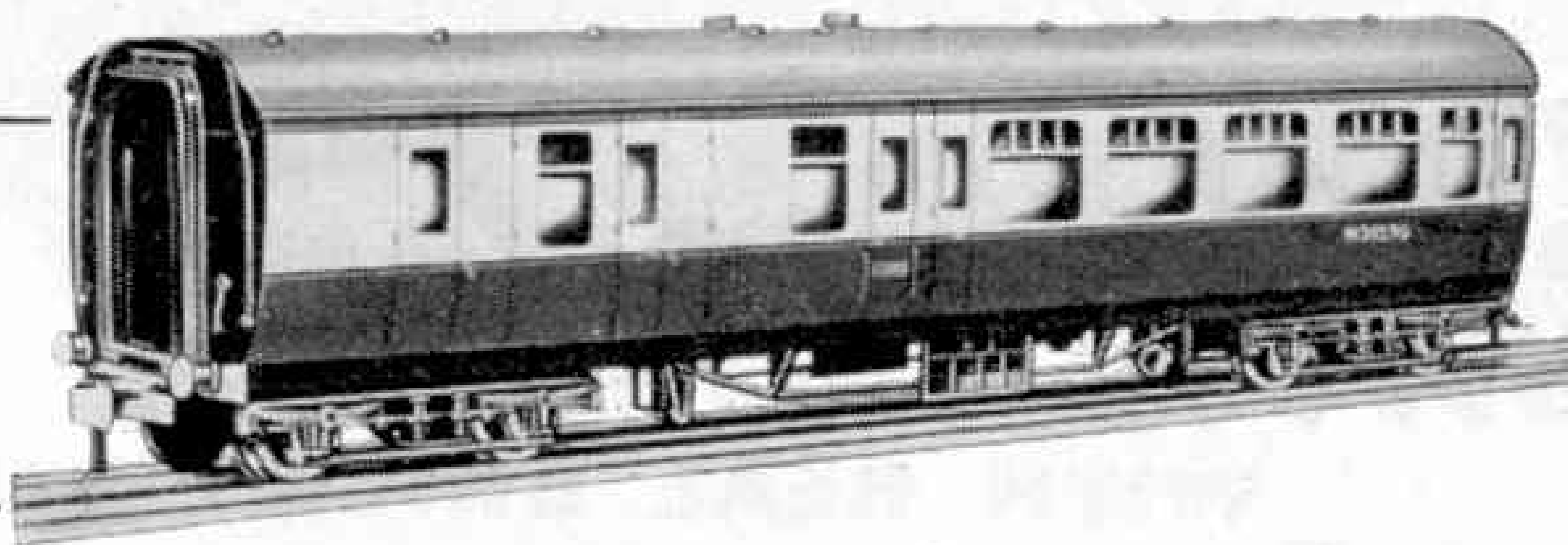
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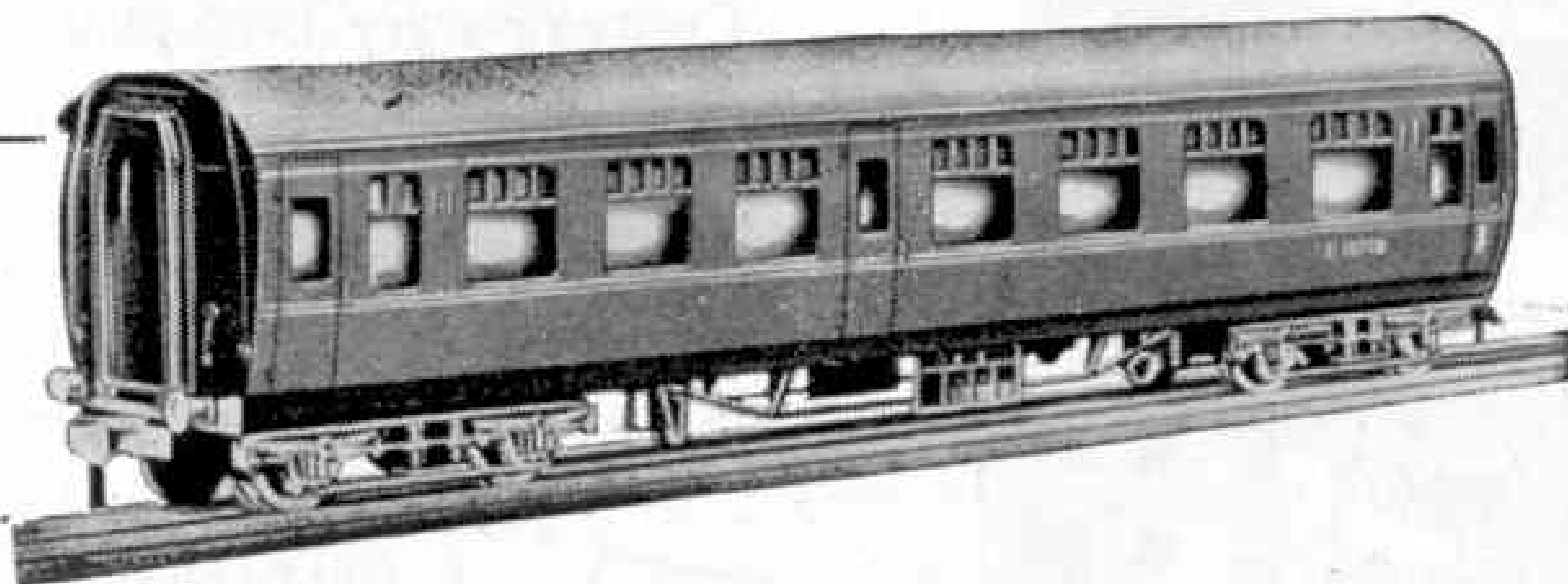
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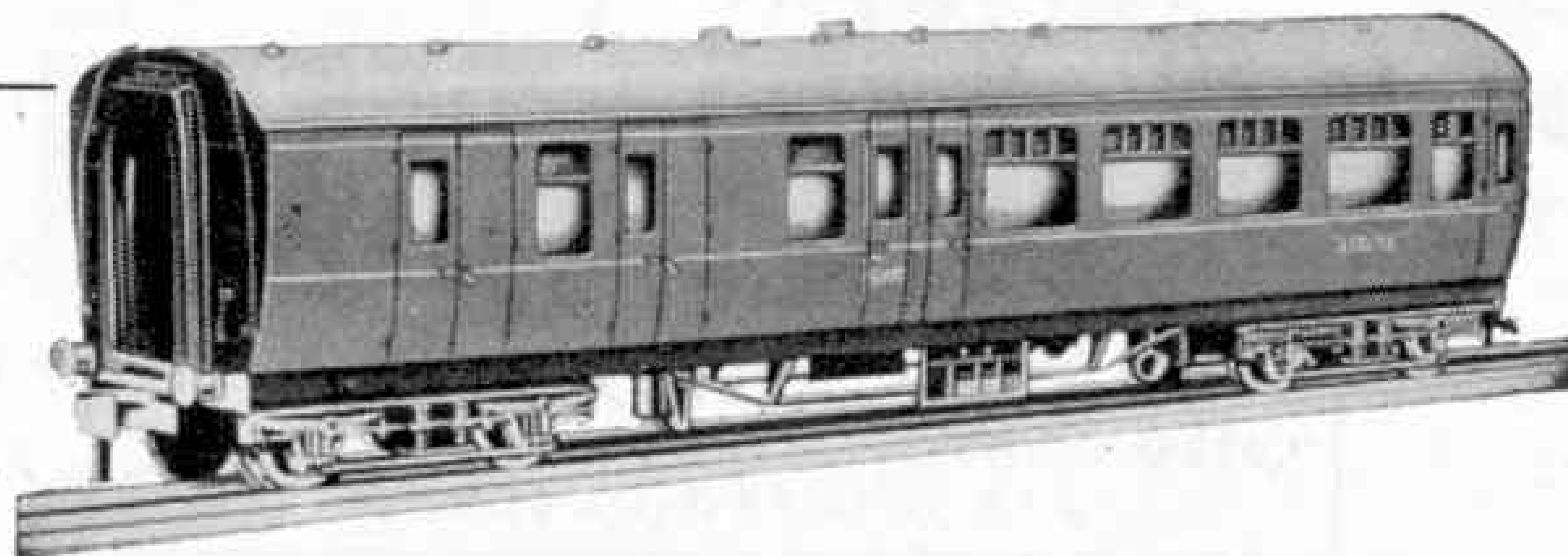
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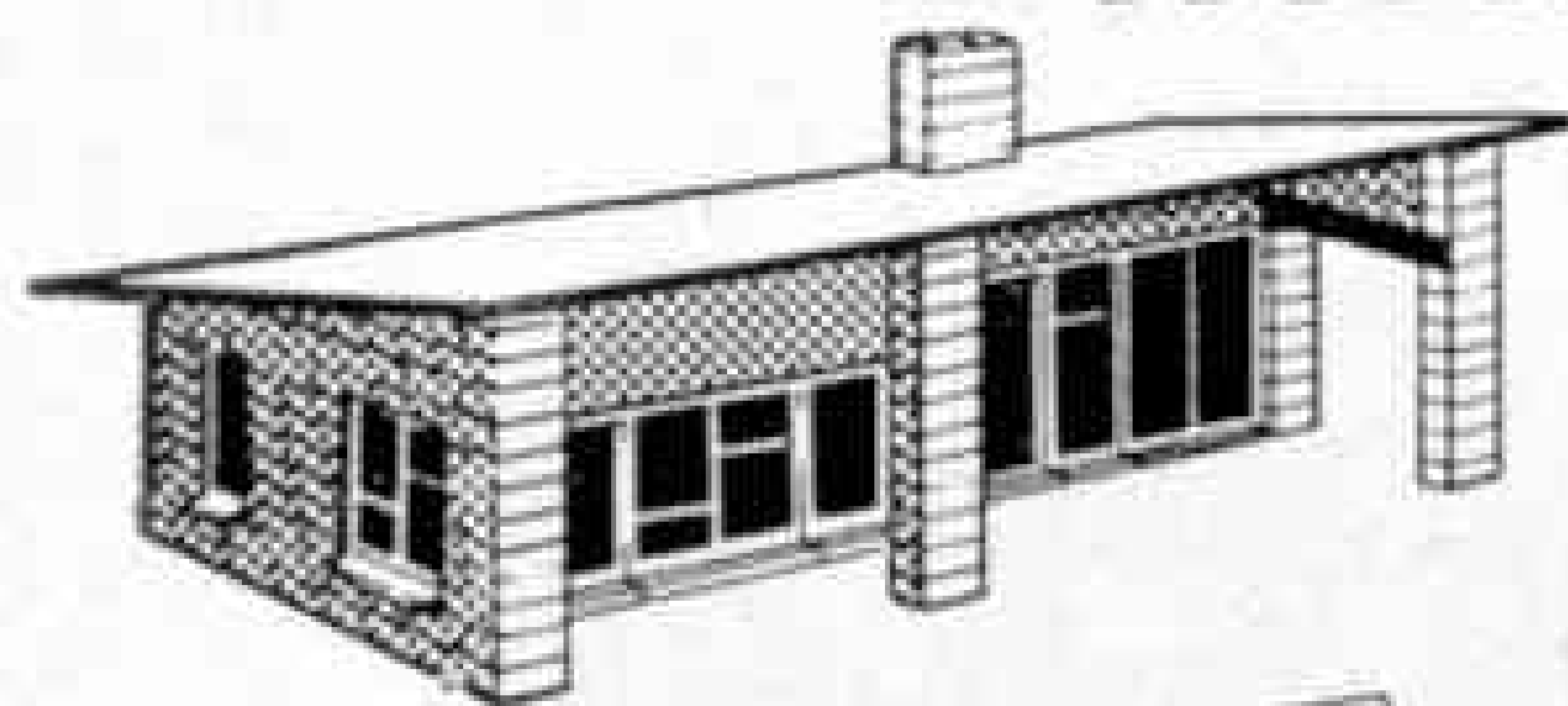


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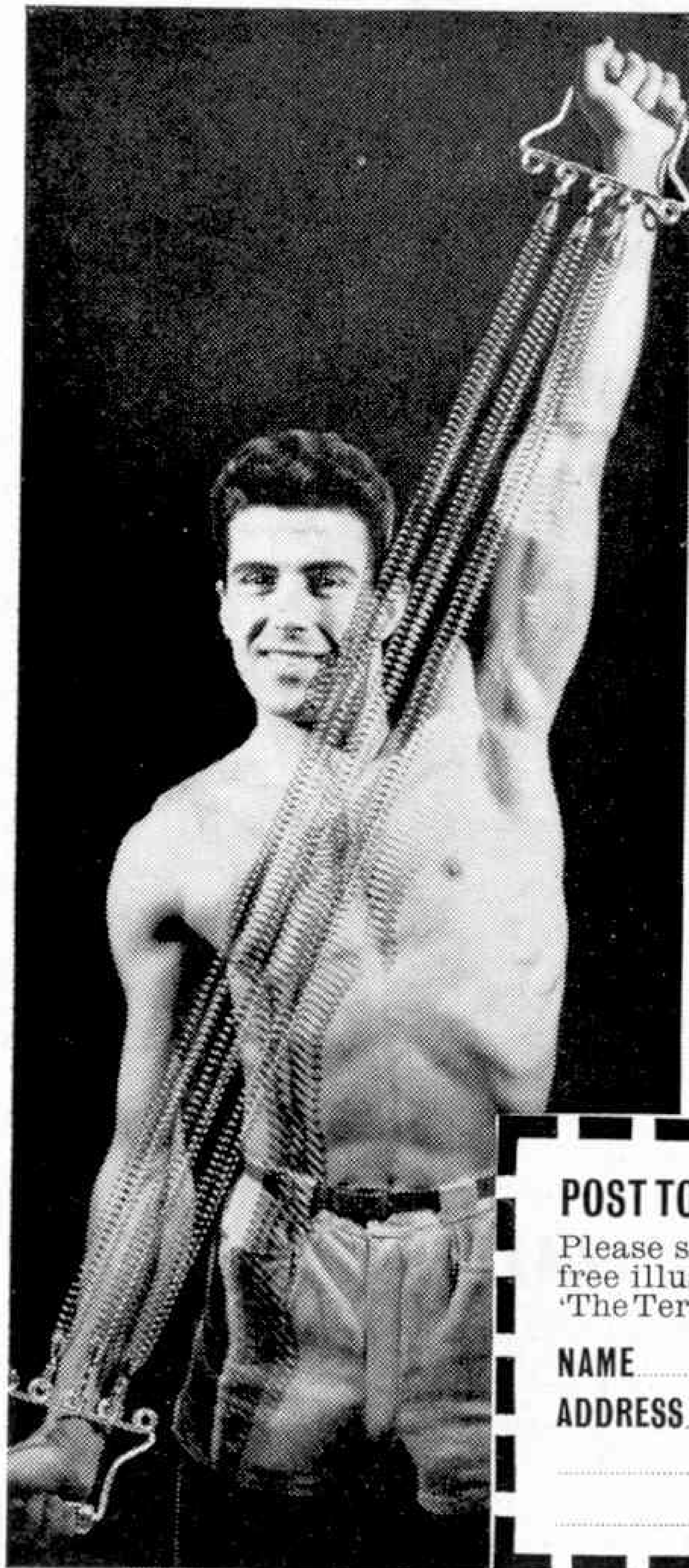
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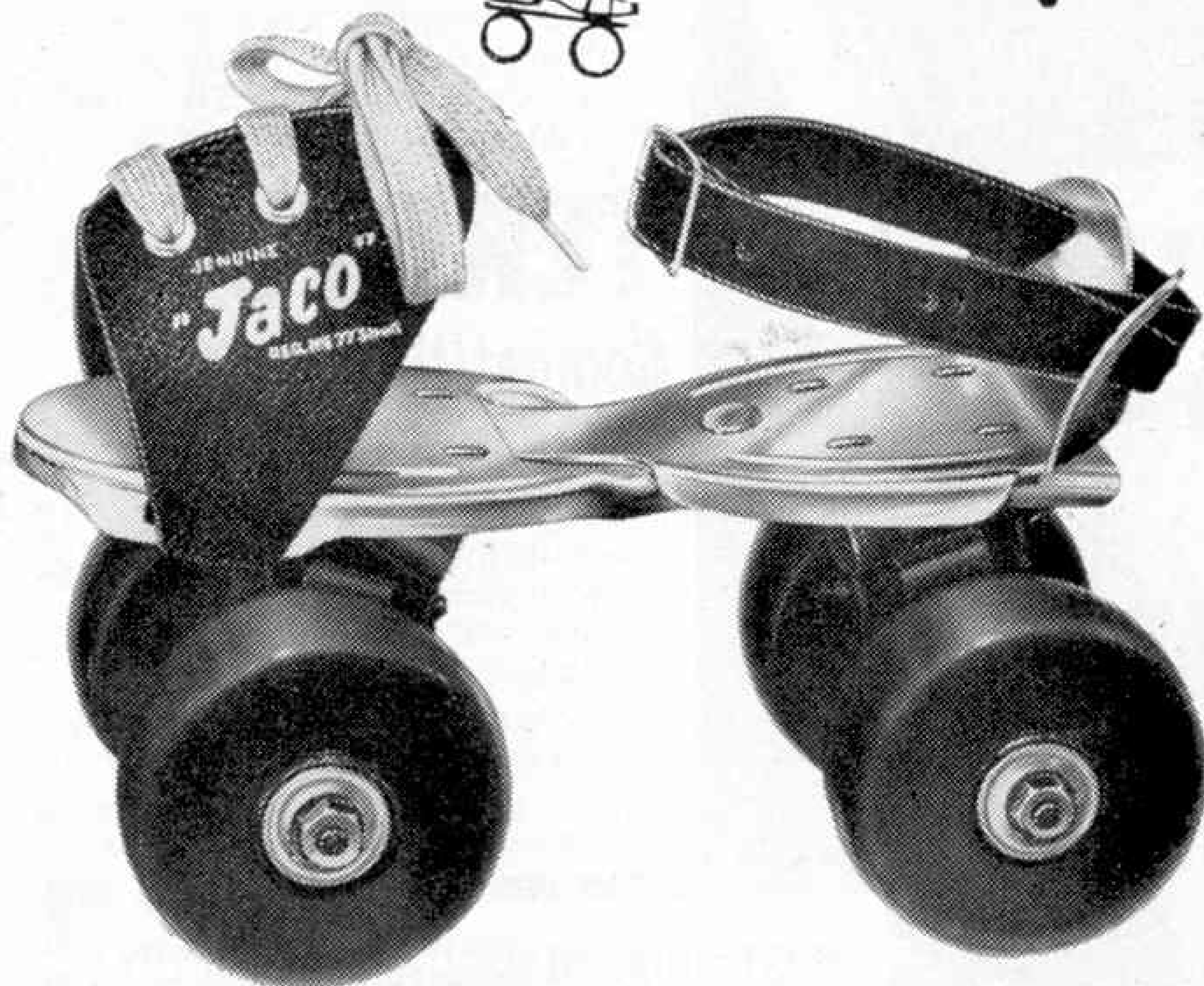


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7/11

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9/3

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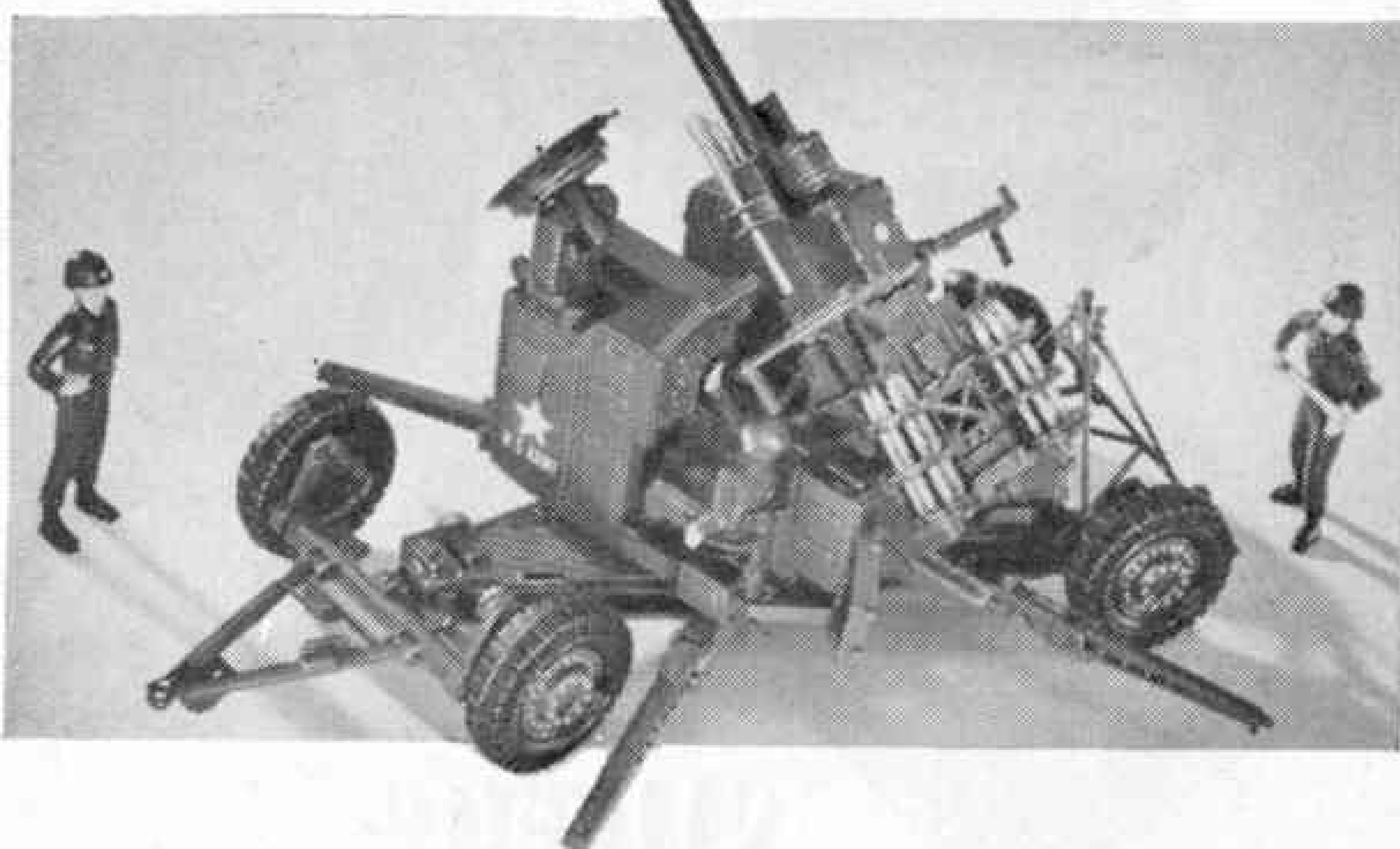
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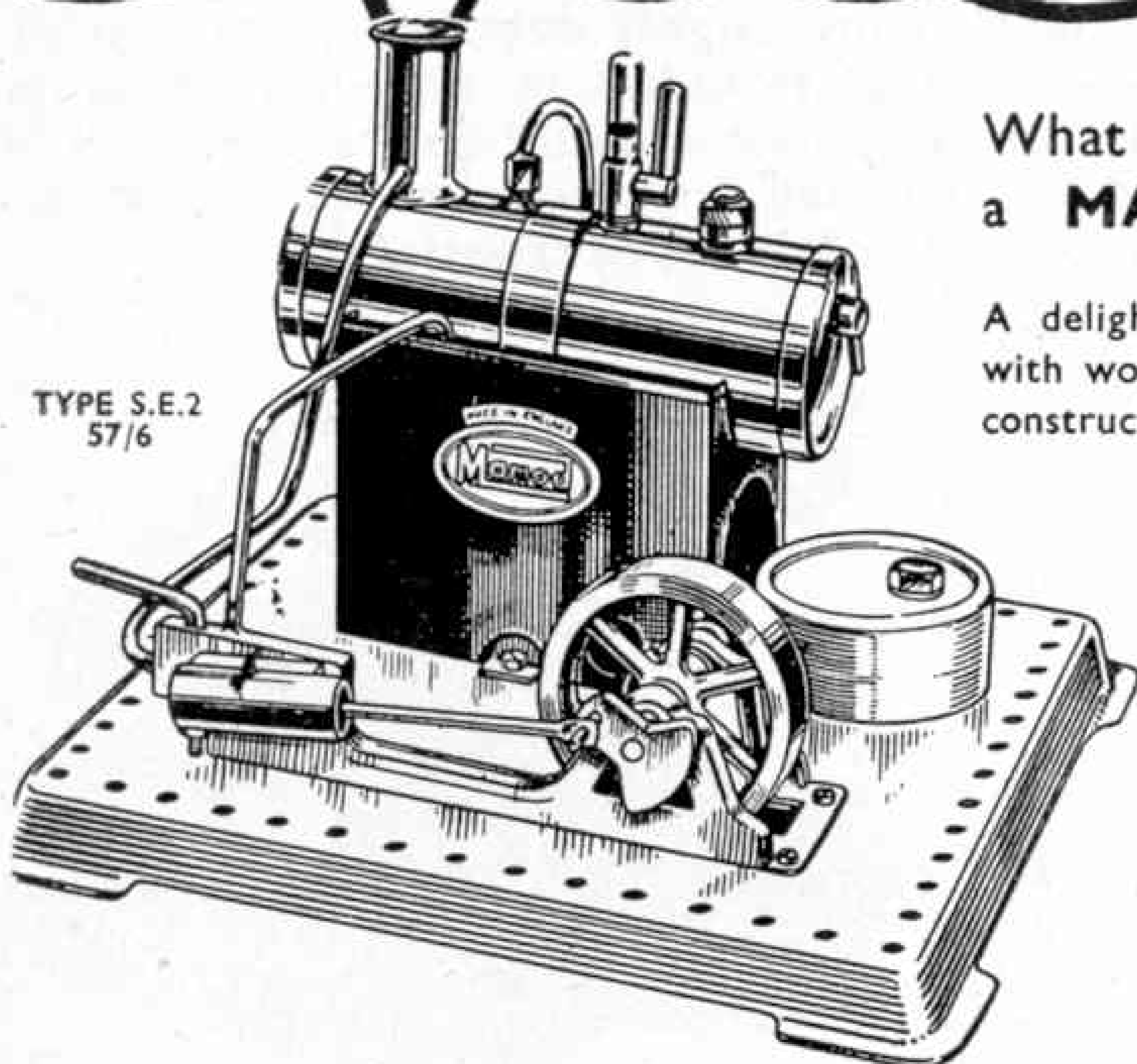
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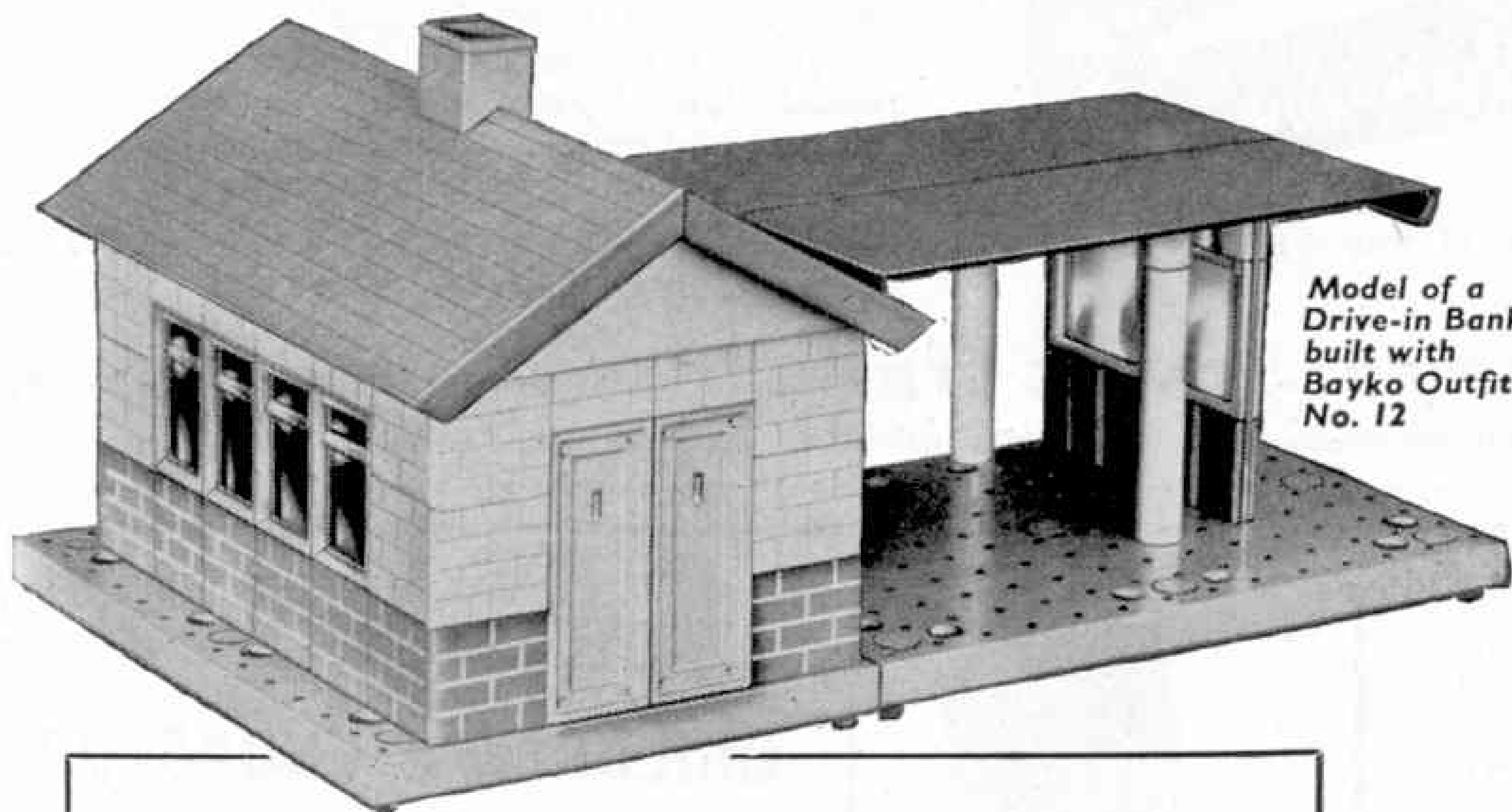
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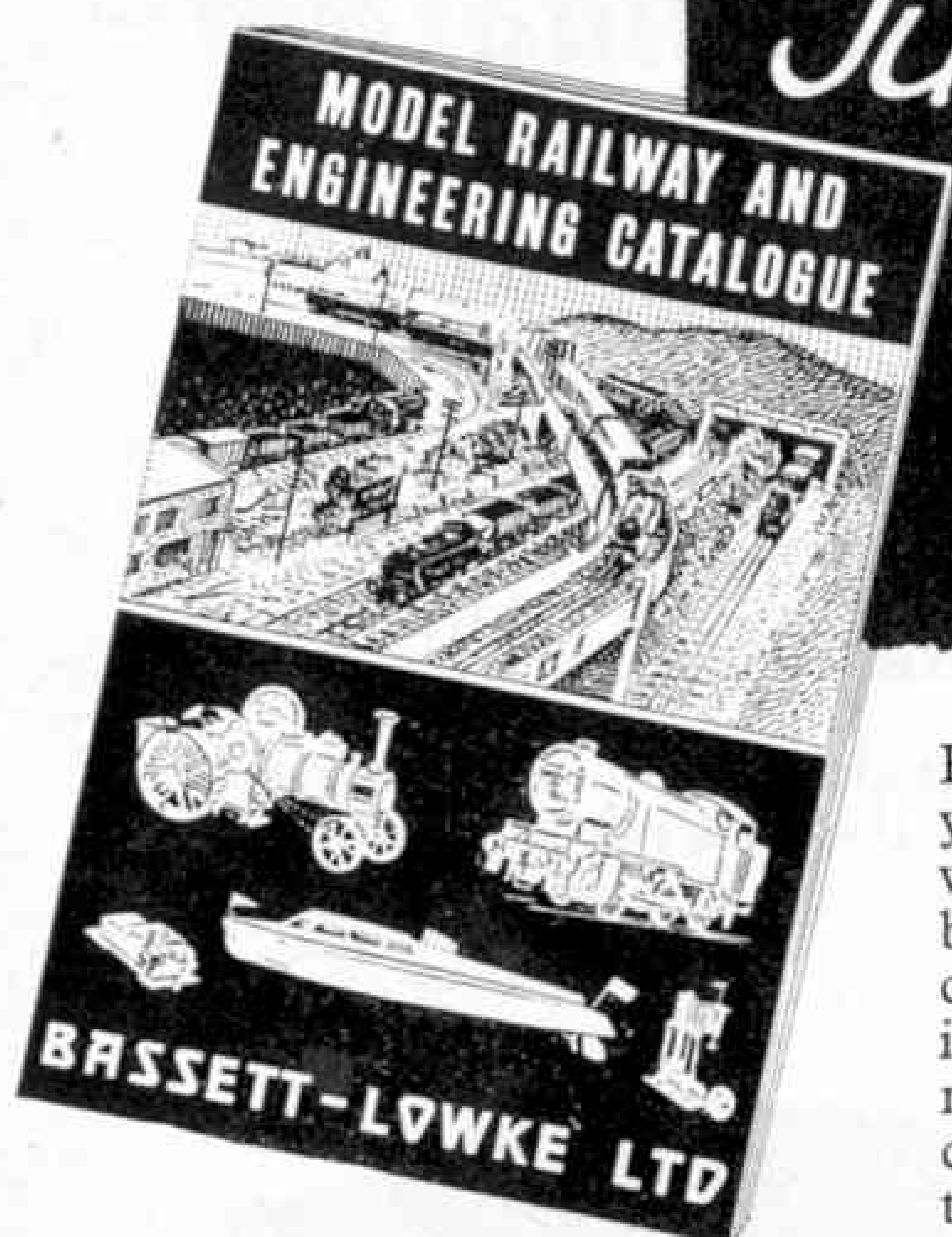
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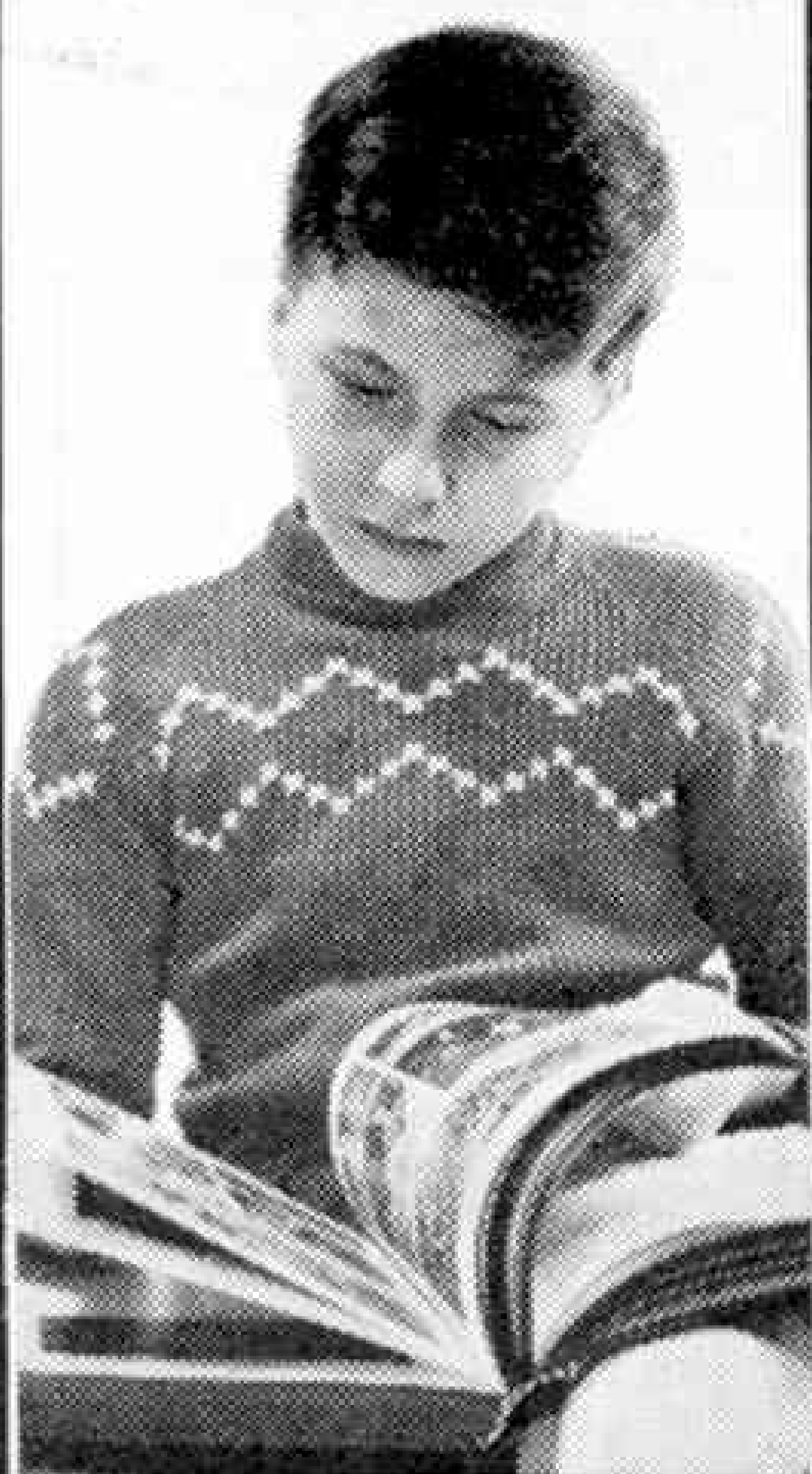
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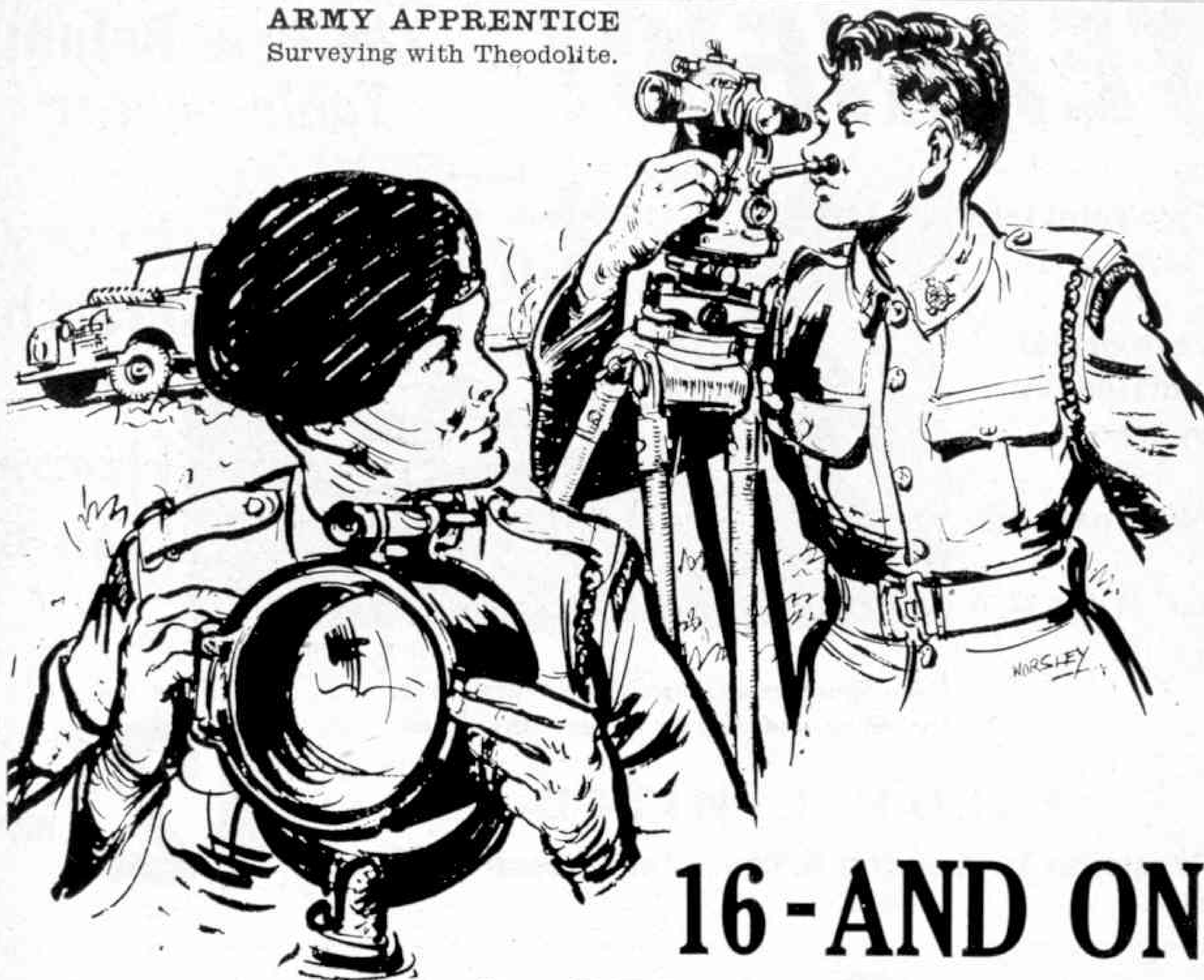
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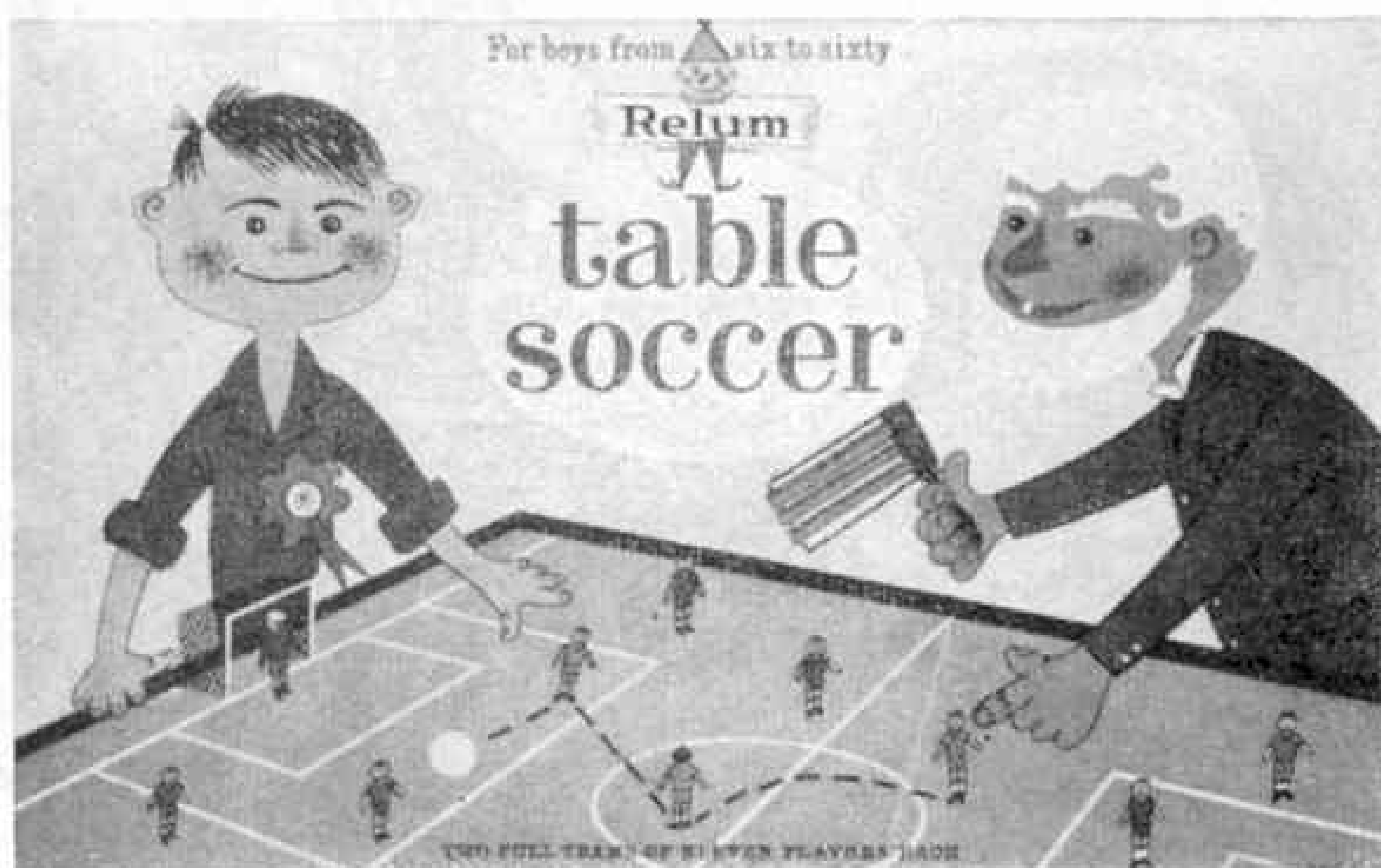
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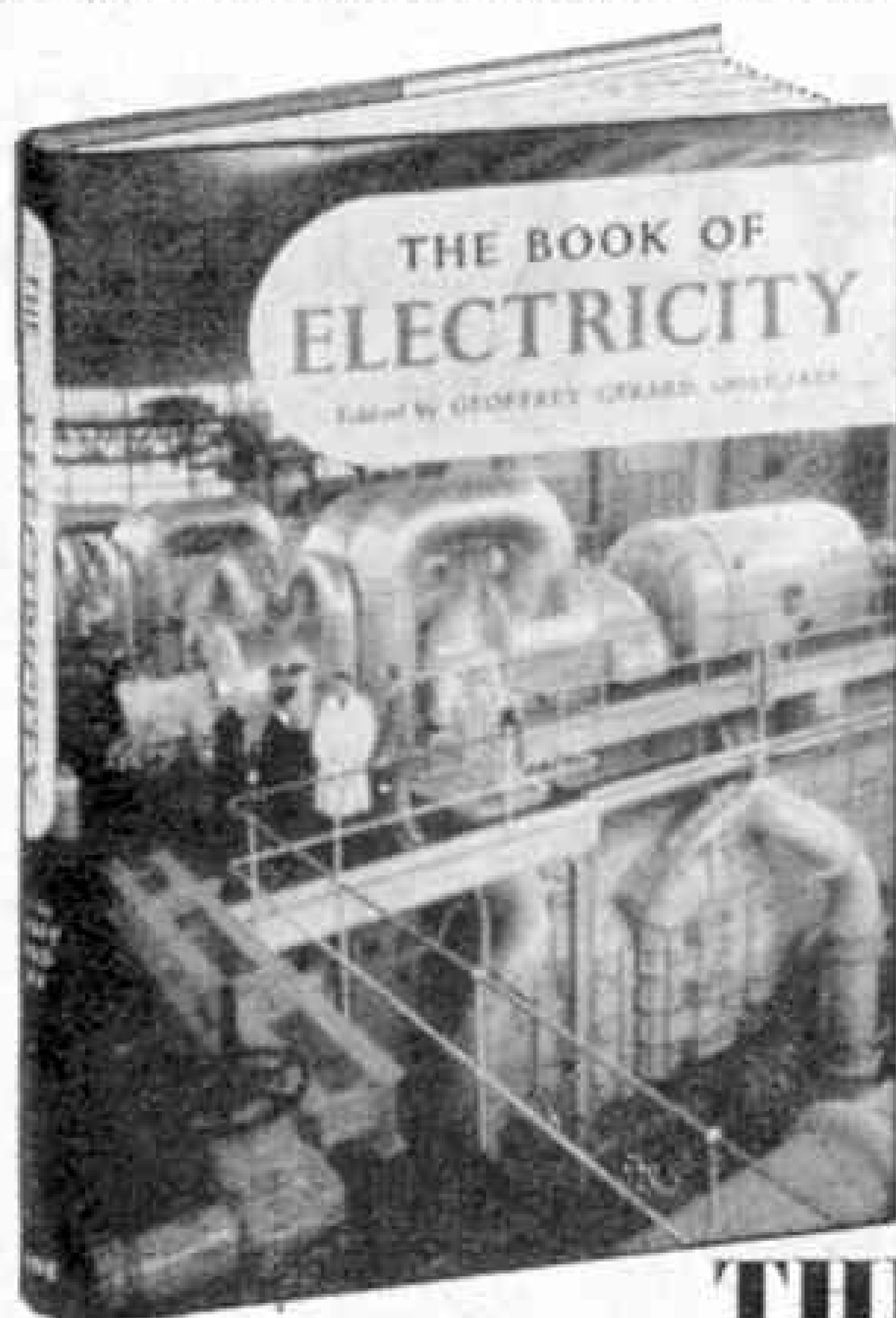
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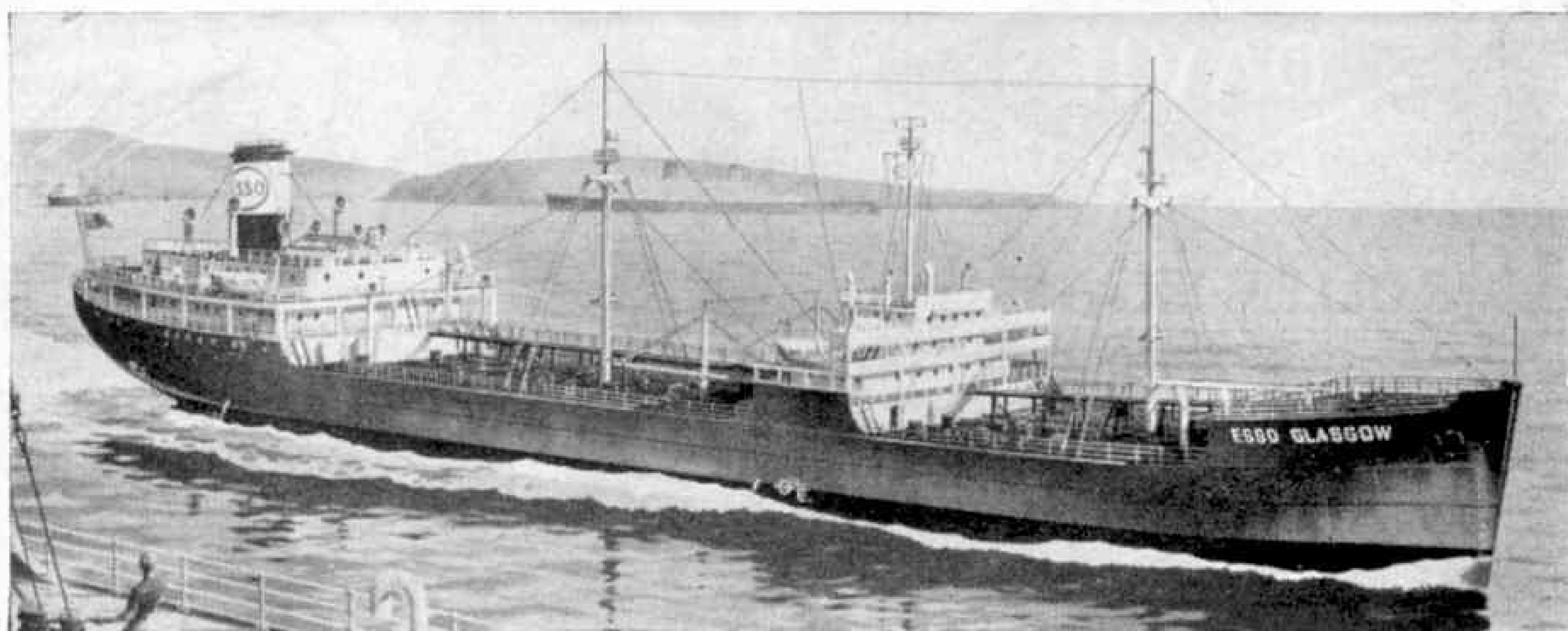
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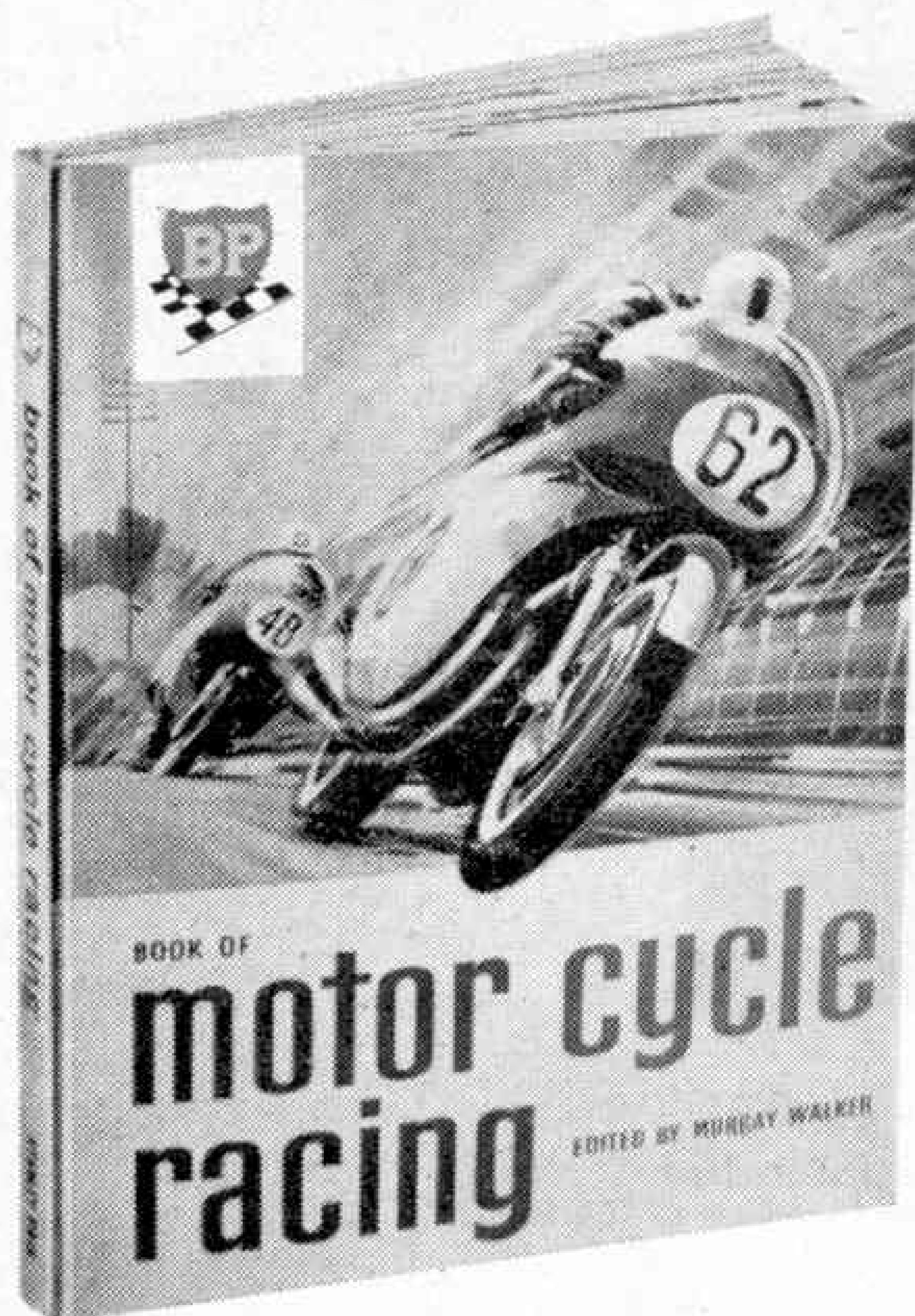
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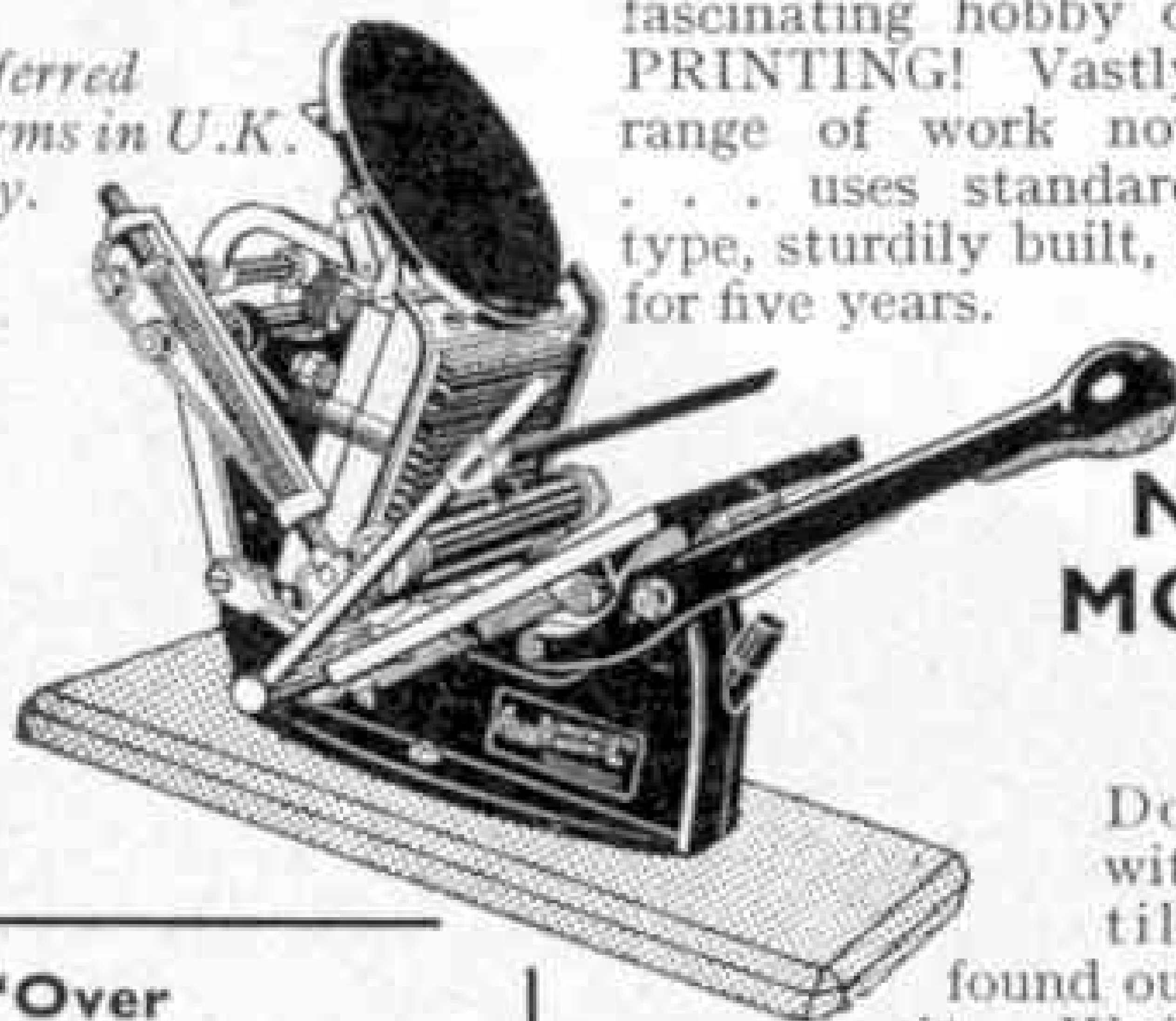


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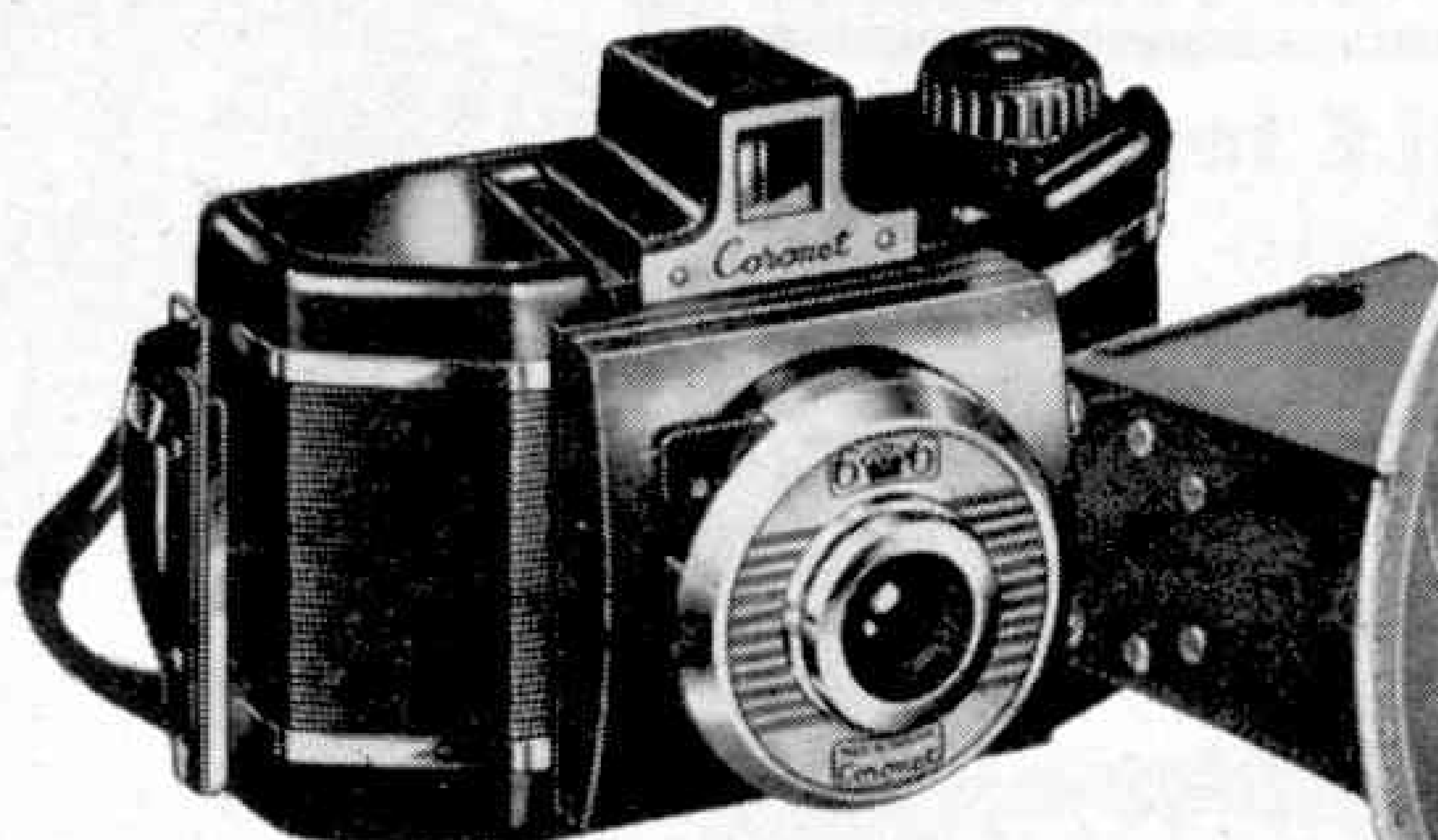


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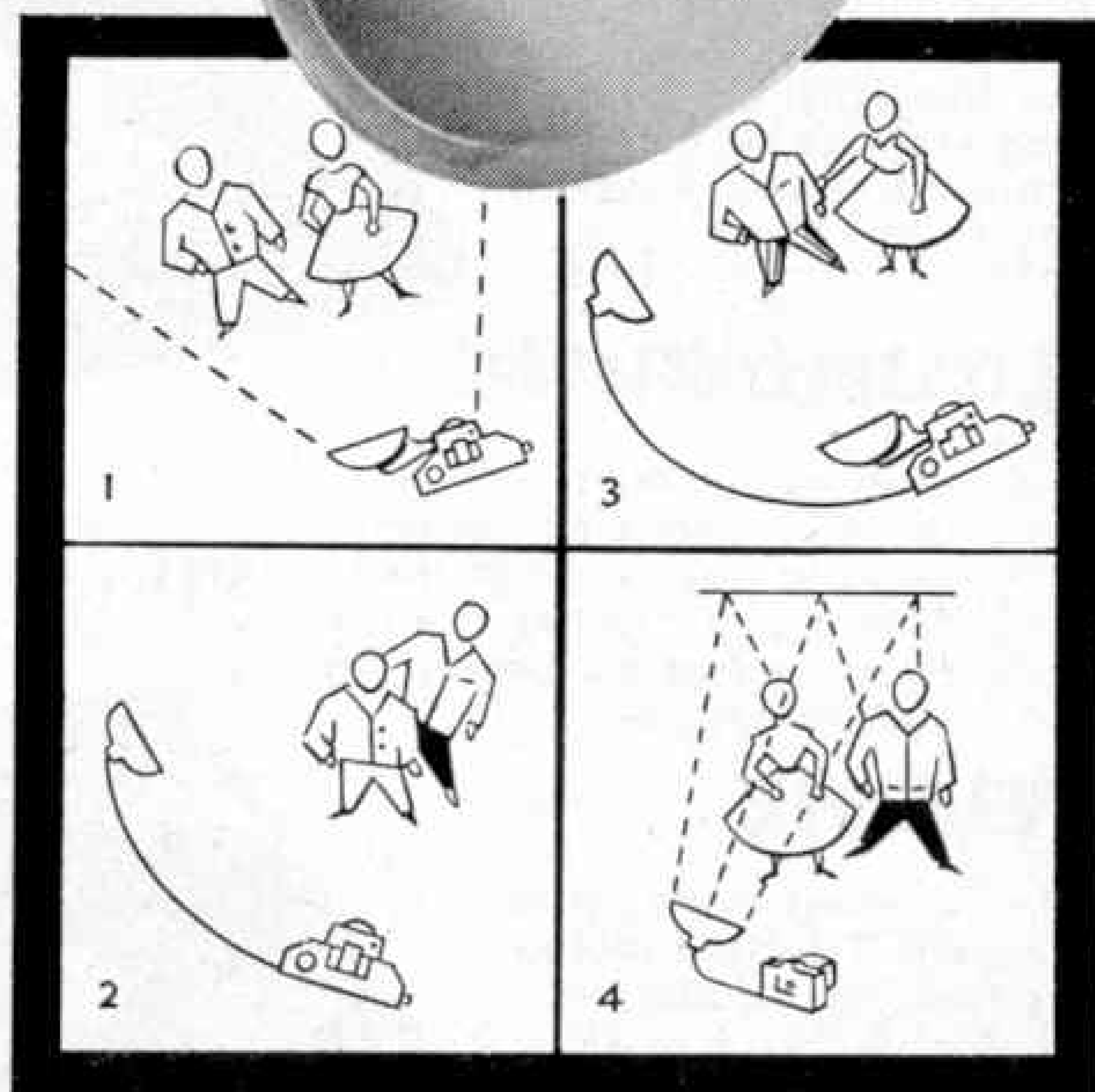
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**Next Month:** NEW STYLE "M.M."—WITH NEW FEATURES

# MECCANO

## MAGAZINE

Editorial Office:  
Binns Road  
Liverpool 13  
England

EDITOR: GEOFFREY BYROM  
ASST. EDITOR: ERNEST MILLER

Vol. XLV  
No. 12  
December 1960

### Christmas Greetings

**M**Y first, very pleasant, duty this month is to wish all the readers of this Magazine, in this country and the many places abroad where the *M.M.* is read, a very happy and enjoyable Christmas. I hope that it will bring for you and your families all that you desire.

Once Christmas with all its joys and pleasures is over, the New Year is close at hand, and this New Year is a very special one for our readers because it will see the introduction of the new-style *Meccano Magazine* about which I wrote briefly last month. It is, so to speak, a new start to a New Year and I hope it will be an auspicious one.

When, some weeks ago, many thousands of our readers gave their views on the Magazine, in their answers to our questionnaire, it was obvious that most of them were very satisfied with the type of articles provided. But there was a steady and insistent call for a Magazine with a larger page size, and all who remember the Magazine years ago will know that, in those days, it had a bigger page area which allowed us to present our pictures far more clearly than we have been able to do in the pocket-sized edition. Now, once again, we shall be able to produce bigger photographs and sketches which will be especially useful to readers who specialise in Meccano,

and who are keen model-builders.

The enlarged page is  $9\frac{1}{2}$  inches deep and  $7\frac{1}{2}$  inches wide against the corresponding measurements of 8 inches and  $5\frac{1}{2}$  inches in the present "pocket" sized magazine.

You will also be interested to know that the New Year will see the introduction of new features in the *M.M.* Among the first of these will be a series on thematic stamp collecting by Mr. Ernest Argyle, who is widely known as an authority on this fascinating branch of the collector's art. Other things in store include a series on cars then and now.

**THE EDITOR.**



This woodcarving represents an age-old craft which even today is perpetuated in the misericords in some of our churches. J. C. D. Smith writes about this form of medieval art in next month's "M.M."

A merry party of servants in Tudor times bringing back a load of mistletoe from the woods to decorate the hall of their master, the Baron. Photograph reproduced by courtesy of the Radio Times Hulton Picture Library.

## Under The Mistletoe Bough



EACH year at Christmas time, a cluster of mistletoe, shimmering with silver pearls and pale green leaves, is hung over the door, on the walls, or from the ceiling of the room in probably every home in Britain. Indeed, this plant has been used on festive occasions in Northern Europe from time immemorial and the Druids held nothing in greater veneration, not only because the mistletoe is rarely found growing on an oak tree, but because the oak tree itself was also sacred. They believed that the mistletoe plant had been sent from heaven and that it possessed the virtue of healing all kinds of ills, rendering poisons harmless, making barren

---

*By Geraldine Mellor*

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humans and animals fertile, banishing harmful sprites, guarding against witchcraft, and bringing great blessings and good fortune.

However, these beliefs were conditional, and to increase their effectiveness the Druids laid down the rule that the mistletoe must never be allowed to come into contact with the ground, and that it should not be cut with anything made of iron. Consequently, a special golden sickle was reserved for the use of the Druid priest who, at certain festivals when the mistletoe was gathered with elaborate solemnity and pomp, carefully severed each spray and allowed it to drop into a clean white cloth. The Druids, in fact, supposed that in winter

the oak tree transferred its spirit into the semi-parasitic mistletoe plant, where it had the use of evergreen shelter until the following spring, when the oak had again put on its own green foliage. In fact, the name Druid is generally regarded as meaning "oak men".

Mistletoe is reputed to have been the Golden Bough of classical legend which played so significant a part in the curious ritual celebrated at the temple of the Roman goddess Diana (identified with the Greek Artemis), situated in a grove at Lake Nemi, near Rome. She was the goddess of hunting and of the moon, and was worshipped there with harvest festivals as the deity who gave fruitfulness. The guardian of her shrine was a fugitive slave or gladiator, known as king of the wood, whose duty it was to stand guard under a mistletoe bough, called the Golden Bough, which grew on an oak in the grove where Diana's temple stood. Should any other slave take a twig from the bough, and kill the king of the wood, it was laid down that the victor would become the guardian of the shrine in his place.

At Nemi it is probable that the king of the wood was held to be the incarnation of the spirit of the forest, and this unusual rule of succession was established to ensure that the guardian of Diana's shrine should always be virile, symbolising fruitfulness.

To the old Norsemen, mistletoe was the holy and terrible plant that slew Baldur, the best, wisest and most loved of all the



gods; but in Ancient Scandinavia it was so highly revered that even enemies who happened to encounter each other under a mistletoe bough in the forest would divest themselves of their arms, exchange a cordial greeting, and observe a truce until the following day. From this tradition stemmed the habit of hanging the sacred plant over a door or inside a room as evidence of friendship and peace to all who enter in.

A little later on, the now purely English habit of kissing under the mistletoe was interpreted as a genuine pledge of love, as well as an omen of happiness, good luck, long life and fertility. In bygone times, when a boy or a man claimed a kiss beneath the mistletoe, it was the practice to wish the chosen girl or woman a happy New Year, and to present her with one of the berries for good luck.

The Ancients of Switzerland and Bohemia, the historic kingdoms of Central Europe, regarded mistletoe as being able to ward off thunderbolts and lightning, and in certain areas of old-time Europe, including Sweden and Italy, the plant was credited with the power to prevent or put out a fire. On the other hand, in the Dark Ages it was

By contrast with the picture on the opposite page is this showing mistletoe being gathered in modern times. The photograph, reproduced by courtesy of Fox Photos Ltd., was taken at Woodmancote, near Cheltenham.



frequently spoken of as the "Spectre's Wand", for it was then widely held that if a man gripped a mistletoe bough in his hand he would be able to see ghosts and force them to converse with him.

But how, you may ask, has mistletoe come to be regarded as a *Christmas* symbol and decoration? Following the conversion of Northern Europe to Christianity, the Church at first allowed mistletoe inside their sacred buildings and, in the early Middle Ages, it was customary for male members of the congregation to hold a sprig of this plant over the heads of girls and women, and salute them with a respectful kiss at a certain part of the service. Unfortunately, these salutations grew more boisterous and hilarious than was considered fitting, and so the offending mistletoe was banished from entering the church door. The one English exception to this rule was at York Minster, where, prior to the Reformation, a large mistletoe bough was brought into the sanctuary each Christmas Eve and ceremoniously placed upon the high altar by a priest. A general pardon and freedom for everyone was proclaimed throughout York for so long as the mistletoe remained there. Moreover, in this ritual the plant, called "All-heal" by the Druids, was used as a token of Christ, the Divine Healer of all nations.

The mistletoe was also largely excluded from the ancient sculpture and carvings of the Church. Nevertheless, I know of one instance where it is represented, and there may be others. Mistletoe sprigs, with berry and leaf, fill the spandrels of one of the very striking tombs in the Cathedral of Bristol, which are said to have been designed by some artist-monk attached to the Berkeley household—a well-known local family.

Ultimately, the British people adopted the mistletoe as a Christmas decoration for their homes. Its former heathen religious significance was quickly forgotten, although certain of the other meanings and traditions have remained to this day, such as the kiss beneath the mistletoe; the token of friendship and good will to all men; the symbol of happiness and good fortune; and the new Christian interpretation:

*The mistletoe bough at our Christmas board*

*Shall hang to the honour of Christ the Lord;*

*For he is the evergreen tree of Life . . .*

This familiar Christmas decoration that never takes root in the ground, but is a semi-parasite growing on (Cont. on page 639)

# Those Merry Christmas Peals

● *Ringling church bells to herald Christmas is a very old custom, and the festive season would seem incomplete without such happy peals. Britain, indeed, may truly be regarded as the home of bell-ringing.*

BRITAIN has not been called the "Ringing Isle" without good reason, and that title is particularly apt at Christmas when teams of bellringers broadcast the Glad Tidings across our countryside.

Although mechanical bellringing is common abroad, and has been adopted by a few churches in the United Kingdom, devices for automatic pealing have not so

interest in the art today. Indeed, if the age of some of our church bells means anything, it will be a long time before campanology—to give bellringing its technical name—is no longer used to celebrate Christmas.

Some of our most ancient bells are not in great cathedrals but in village churches. Claughton, near Lancaster, possesses one dated 1296, and another at Caversfield, near Bicester, carries an inscription showing it to be older still.

Such ancient bells are more often heard than seen, yet a number of interesting ones no longer in use have been lowered from their belfries and put on show. One now displayed in the parish church at Pateley Bridge, Nidderdale, is thought to have hung originally in Fountains Abbey. It was hidden when that monastery was sacked by Henry VIII, but was later brought out again. It served at Pateley Bridge until the present peal of bells was installed.

Another venerable bell is preserved as a souvenir in West Bridgford Parish Church, in Nottinghamshire. It was cast by a local man in 1499, and it bears his trade-mark. A bell from Elizabethan days is kept at

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*By Arthur Gaunt*

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Loughborough's modern bell tower. It contains a fine carillon of 47 bells, on which regular recitals are given.

far become popular here. Fears have sometimes been expressed for the future of manual bellringing in this country, but happily there are signs of a revival of

Hubberholme, Wharfedale, and Bispham Church, near Blackpool, harbours a rather unusual example which is really two bells in one, having been cast from a pair which were rung at Bispham more than 400 years ago.

The present-day practice of "ringing the changes" dates back 300 years. Before the seventeenth century our church bells were rung haphazardly, but a Cambridge man called Stedman then found that by rearranging the order of ringing it was possible to perform no fewer than 5,040 non-repeating changes on seven bells.

*With twelve bells (and a number of churches in Britain have peals of that size) some 479,001,000 changes are possible, although it has been calculated that it would take about forty years' continuous ringing to complete them.*

No wonder the art of bellringing is not easily mastered, and calls for both concentration and physical strength. It was once regarded as such thirsty work that ringers





This monster ale jug, in Bowdon Church, Cheshire, used to hold liquid refreshment for the bellringers.

were supplied with free ale, with an extra allowance at Christmas. A souvenir of those days is a huge ale jug in Bowdon Church, Cheshire, from which the bellringers used to fill their tankards. The names of a bellringing team appear on the jug, together with a picture of the church as it was 200 years back.

Legends are associated with quite a number of our church bells. Several churches are said to have had their bells stolen by thieves who lost them when the ship carrying away the booty foundered just offshore. Consequently, there is a tradition at some places that church bells can be heard pealing under the waves on Christmas morning. One place to listen for them is the foreshore at Whitby, Yorkshire, for Whitby Abbey is said to have been robbed of a fine peal by pirates who, in turn, lost the bells when their ship sank.

### British Bell-makers

British craftsmen are still making the finest bells in the world, as they have done for centuries. In the Middle Ages they travelled round the country, setting up foundries here and there, and as long ago as the thirteenth century they formed themselves into a protective guild.

Today, Croydon and Loughborough are the main centres of bell-making and, appropriately, Loughborough has one of the finest sets of bells in the world. This wonderful carillon was installed in a specially-built tower in one of the town's parks, and is a World War I memorial. Costing more than £20,000, the carillon consists of 47 bells covering four chromatic octaves. The

biggest bell weighs nearly four and a quarter tons and the smallest (a mere seven inches in diameter) only 20 lb. The carillon is played by one ringer operating a type of keyboard, and a variety of tunes can be rung—including Christmas carols.

Britain's biggest church bell, aptly enough, is in St. Paul's Cathedral, London. It weighs seventeen and a half tons, while Great Peter, the largest bell in York Minster, turns the scales at twelve tons. The curfew bell at Exeter Cathedral weighs 6½ tons.

The most famous of all curfew bells, in Chertsey Church, Surrey, is much smaller, but this is the one described in the ballad "Curfew Shall Not Ring Tonight." The bell is the fifth in the set and it is still rung at dusk each day in winter.

At some places a curfew continues to be rung as a result of an old bequest. Thus, at Wokingham (Berkshire) it is rung regularly because a grateful traveller, who had been guided to safety by it, left funds to pay a ringer.

Christmas, however, is the time when church bells ring out most memorably. From great cathedrals and village churches the peals mark the year's most important festival.



The bell, now preserved at Pateley Bridge, Nidderdale, which is believed to have hung originally in Fountains Abbey.



The new A.A. retriever unit seen in action.

## Road and Track

MOTORWAY patrols of the A.A. have been equipped with a new type of towing device—a retriever unit which can be stored in twelve sections in an A.A. Land Rover. The object of the exercise is to lift the front of a vehicle, so that its

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By  
Peter Lewis

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wheels are clear of the ground, and then tow the vehicle along on a two-wheeled bogie. First, a towing frame is positioned under the front wheels, and the frame—bearing the weight of the front end of the car—is then elevated by jacks and the bogie slipped into position under the axle of the towing frame. There is, of course, no need for anyone to sit in the driving seat of the car that is being towed. A clever idea and one thought up by the A.A. breakdown service experts.

### The Wolseley 6/99

When the Wolseley 6/99 made its debut in 1959, it was soon acknowledged as a 100 m.p.h. motor car and a worthy successor to the long line of Wolseleys used by the Metropolitan Police. Like its predecessors, the 6/90 and 6/80, the Farina-styled 6/99 is roomy, fast, inexpensive and economical

to run. It would be difficult to find a more suitable car for police work, and the 6/99—with its 3 litre, six cylinder, twin-carburettor power unit developing 108 b.h.p. at 4,750 r.p.m.—is capable of swallowing the miles in an effortless fashion. To me, it is like driving a car with Seven League boots.

The 6/99 is, in my opinion, the best looking "Farina" car in the Nuffield Group. Wider and longer than the 1½ litre Nuffield cars, the 6/99 seems far better proportioned. With a not inconsiderable unladen weight of 30½ cwt., it can accelerate through the gears to 45 m.p.h. in 10 seconds, to 60 m.p.h. in 15 seconds and can cruise all day at over 80 m.p.h., some 20 m.p.h. below its maximum and ready to "get up and go" when the mood commands. On M1, I held the Wolseley at a constant 90 m.p.h. for nearly twenty miles and she was as steady as a rock—the Lockheed disc brakes on the front wheels well able to cope with any emergency. Petrol consumption, driven hard, is between 18 and 20 m.p.g.



A worthy successor to a long line of famous cars—the Wolseley 6/99.





The 1927 Austin Seven "Chummy", which crossed the Maritime Alps without difficulty. "It's a wonderful little motor car," says its owner, Tim Pratt.

To sum up, the 6/99 can be hustled along in the best tradition of police cars, is certainly no gentleman's carriage as some people have suggested, and has a traditional Wolseley luxury interior finish that makes it well worth £1,254.17.6.

### Gallant "Chummy"

Three years or so ago, when elderly cars cost two or three times what they do today, 18-year-old Tim Pratt of Pinner paid £35 for a 1927 Austin Seven "Chummy". Originally the car belonged to an elderly lady in Yorkshire and when she died, in 1955, the "Chummy" was auctioned—together with the furniture—bought by a private owner and stored.

The car was in one piece and by no means a wreck, but Tim decided to strip it down completely. In two years, working at week-ends and in the evenings, he rebuilt the engine, relined the brakes (the hand-brake operates the front (Cont. on page 639)

No car is perfect and although the 6/99 is not the sort of car that demands constant use of the gearbox (it pulls remarkably well over a wide range in top gear) its three forward speeds are controlled by a steering column gearchange that is far from precise. The three speed box is supplemented by a Borg Warner overdrive gear on top and second, giving in effect a five speed box. But oh—that gearlever.

## Racing Personalities: Peter Harper

WITH 100,000 miles of rally driving and 40 international rallies behind him since he entered his first rally with a 2-litre Sunbeam in 1947, 38-years-old Peter Harper, of Stevenage, is one of Britain's top rally drivers. Last year, as in 1958, his Sunbeam Rapier was the highest placed British car in the Monte Carlo Rally, and Harper is no stranger to rallies far tougher than the "Monte".

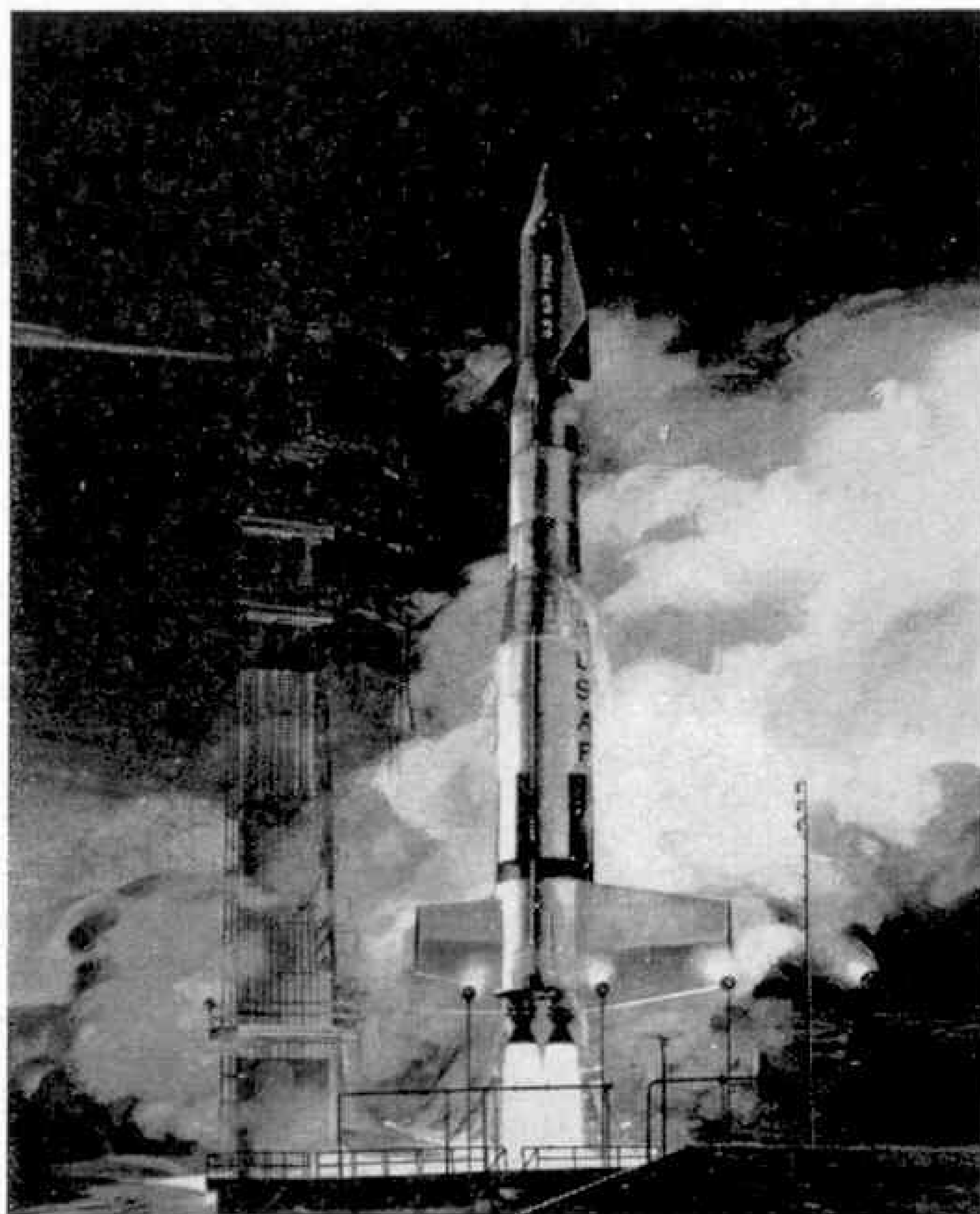
In 1958, his most successful season since 1953 when he became a works driver for the Rootes Group, this ex-R.A.F. fighter pilot was fifth in the Monte Carlo Rally, won the R.A.C. Rally outright and was awarded a Coupe des Alps in one of the most gruelling rallies of them all—the Alpine. The following season was a short one, for Harper broke an arm on the Coronation Safari, run in Africa, over 3,000 miles of some of the worst roads in the world, when his Hillman Husky overturned.

When the Rootes Group started production car racing last year, Peter Harper made four track appearances, one at Brands Hatch and the others at Silverstone. It was a superb piece of driving at the July Silverstone Meeting that earned this comparative newcomer to circuit racing the unstinted admiration of motor-racing enthusiasts everywhere. Harper's Rapier broke the class record on lap 5 of the Production Touring Car Race with a speed of 81.68 m.p.h. but, as he crossed the line, a half-shaft went and a wheel came off. It was only the driver's masterly control that brought the Rapier safely to a halt in the ditch opposite the pits.

Peter Harper emphasises that, dangerous as it may look, production car racing is much easier and far less hazardous than rallying. Having proved himself just as much at home in production car racing as in rallies, I should not be at all surprised to see Peter Harper at the wheel of a Formula Junior car this year.



Peter Harper



● *While experiments are going ahead with remote controlled satellites, America has another project on which firms are working at full pressure—Dyna-Soar, the space 'plane with full, piloted control. This exciting article tells you all about it.*

# DYNA-SOAR ...

## A 15,000 m.p.h. Glider

By John W. R. Taylor

SOON—perhaps even before this issue of the *M.M.* is printed—the Russians or the Americans will send a man on the first orbital flight around the world in a piloted satellite. This will represent a tremendous advance in the exploration of space; but it is only one of several manned space programmes now under way. In some respects it is not even the most exciting, because the astronaut will probably go along just for the ride, with the whole of his flight controlled remotely from the ground.

Dyna-Soar will be different. No mere "tin can", put into a circular or elliptical

Above: A Boeing artist's impression of a Dyna-Soar manned glider being launched into space by a modified Titan intercontinental ballistic missile. The photographs illustrating this article are reproduced by courtesy of the Boeing Airplane Company.

orbit and brought back to Earth by parachute, it will be a proper space-plane, able to go wherever its pilot wishes and to land at an airfield afterwards. Nor is it just a bright idea for the dim and distant future, because several of America's greatest aircraft companies are already working at full pressure on its design.

Some people have suggested that America should abandon the much-publicised Project Mercury manned satellite programme and put all its money and effort into Dyna-Soar. They point out that unless the Mercury capsule re-enters the atmosphere at exactly the right angle for its curved "heat shield" to protect the occupant, he will be roasted by the intense heat, even if the whole capsule is not burned up like a shooting star. Dyna-Soar, on the other hand, will always be under the complete control of its pilot, who will be able to climb up again out of the atmosphere if things get too hot.

There is, however, a very good reason why Mercury and its Russian counterparts must make the first lengthy journeys into space. We know already how to build aircraft strong enough and fast enough for orbital flight: what we do not know is the effect such flights might have on their human occupants.

### The quickest way

The Russians have already whisked two dogs, *Belka* and *Strelka*, nearly eighteen times around the Earth at 18,000 m.p.h. in their second space-ship *Sputnik*, and brought them back. So far as we know the animals suffered no ill effects, but we cannot be certain for several months yet that they were unharmed by radiation. Even if all is well after that time, we shall still need to measure the radiation absorbed by a man in space before we can plan more adventurous journeys, and the quickest way to do this is to send up men in satellites.

Similarly, although the dogs seemed to be only slightly worried when they became "weightless" in orbit, we cannot be sure how



a man would behave in this condition. So far, we have been able to study the effects of "weightlessness" for only brief periods, by putting ordinary aeroplanes into a curving trajectory like that of a rocket missile. Some people who have floated around inside the cabin during such flights say that they found it exciting; others felt sick. Again, we cannot learn more until men are put into a "weightless" condition inside a satellite for minutes and hours at a time.

*Only when we know the answers to such questions can we take the next big step of sending up a man in an aircraft like the Dyna-Soar, which he must be in a fit state to control throughout its flight.*

No time is being wasted while we learn these answers, because the United States is gaining experience with the North American X-15 rocket-plane which will help enormously with the design of Dyna-Soar. The X-15's planned top speed of about 4,000 m.p.h. (six times the speed of sound) is only a quarter of the speed which Dyna-Soar will achieve; but it will still encounter severe "heat barrier" problems when it re-enters the atmosphere from flights to altitudes of up to 100 miles. The effect of the heat on its structure, and experience with the materials and methods used by its designers and pilots to bring it safely back to Earth, will make Dyna-Soar a much safer vehicle when it is eventually launched.

How will it differ from rocket-planes like the X-15? Its name gives a clue to this, because it is an abbreviation of the words "dynamic" and "soaring", and indicates that the vehicle will use both centrifugal and aerodynamic lifts, like a satellite and aeroplane respectively.

The easiest way of understanding this is to follow what will happen during a typical Dyna-Soar launching in a few year's time. So let us imagine that we are in a concrete blockhouse at Cape Canaveral, Florida, one evening in, say, 1964.

Outside, by a tall servicing tower, stands

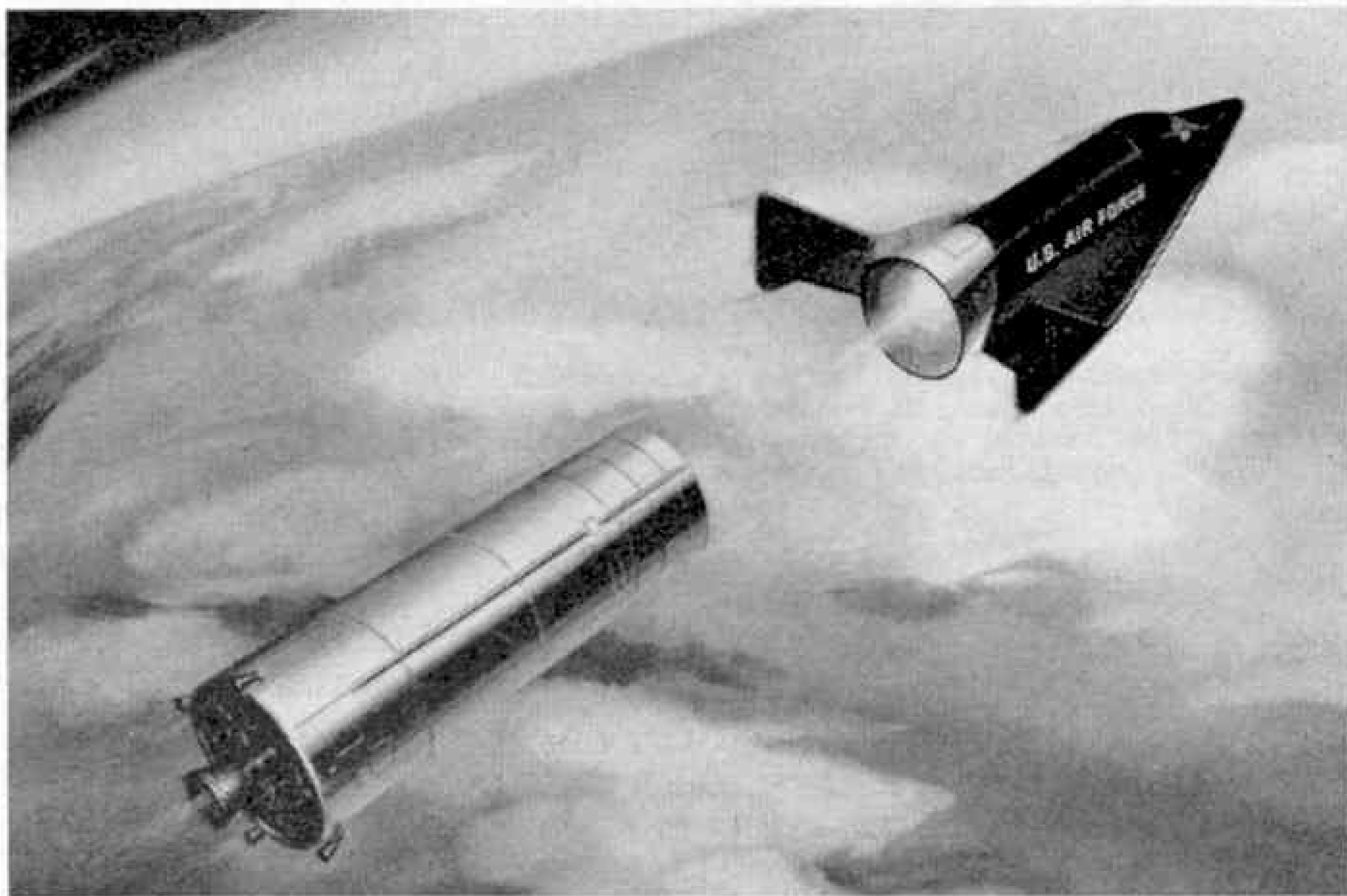
the giant Dyna-Soar launching vehicle. It is a three-stage rocket, of which the first and second booster stages consist of a Martin Titan intercontinental ballistic missile, with four large tail-fins added to improve stability and control during the first stages of flight through the atmosphere. On top, in place of the usual H-bomb warhead, is the Dyna-Soar itself.

This consists of a small delta-wing aeroplane, just big enough to house the pilot in a pressure-cabin in the nose and third-stage rocket-motor and propellents behind him. Like the X-15, it is made of heat-resistant metals such as nickel-cobalt and titanium.

The minutes have been ticking away on the clock and only a few seconds are left before take-off.

"... seven ... six ... five ... four ... three ... two ... one ... FIRE".

On a TV screen high on one wall of the blockhouse, we see the mighty engines of the Titan burst into life, lighting up the launch area with vivid flames and making the ground tremble with their power. Slowly, the rocket begins to lift from the



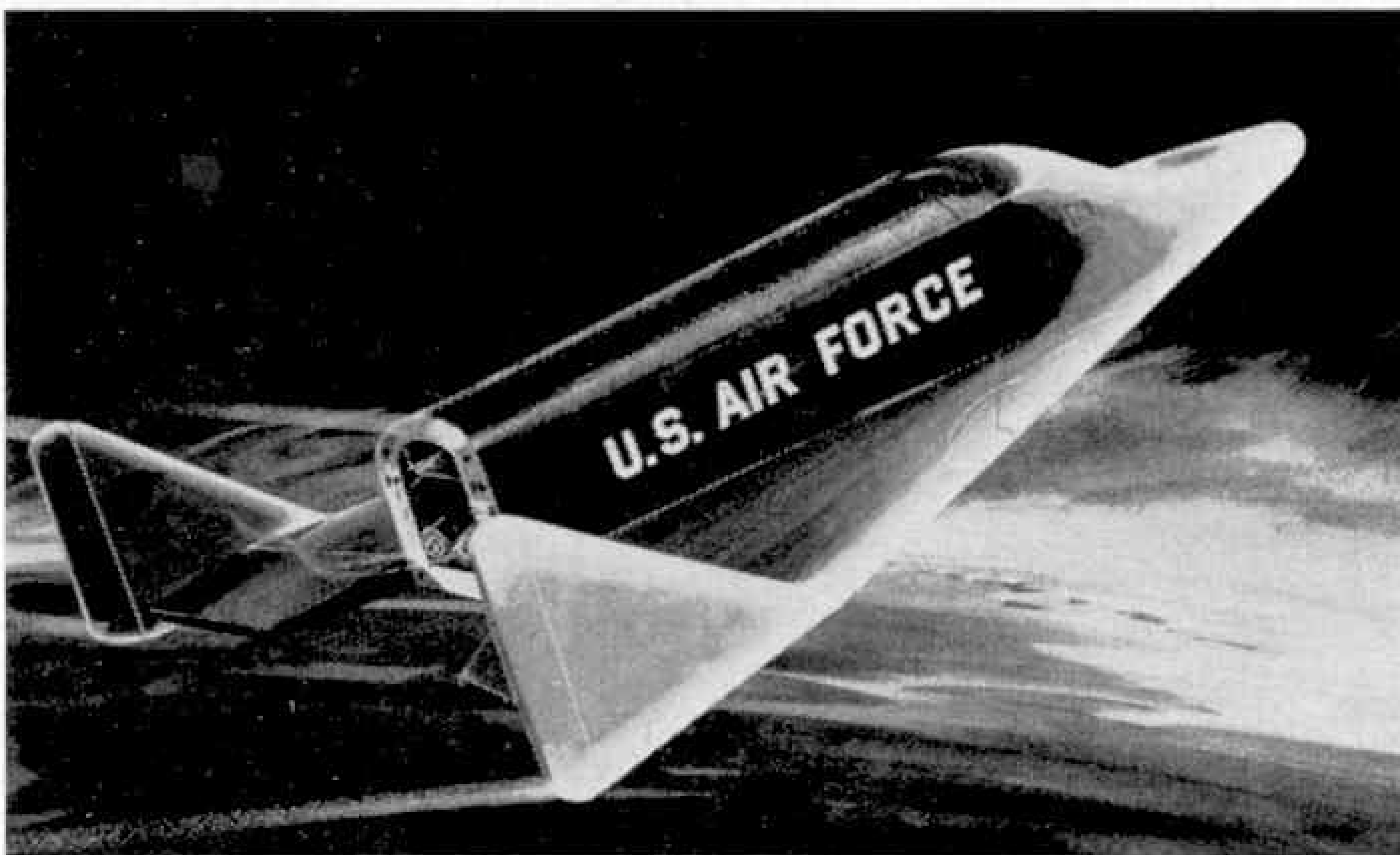
How the Dyna-Soar will look as the second stage of the Titan missile falls away, leaving the aircraft in piloted, near-orbital flight.

pad, and we follow its trail of light on the TV screen as it gathers speed and streaks upward towards the stars.

When the twin rocket chambers of the 300,000 lb. thrust first stage have used up all their propellents, this stage drops away, and the 60,000 lb. thrust second stage takes over. By the time it, too, has burned out and fallen away, Dyna-Soar has reached a

speed of over 15,000 m.p.h. Now the little aeroplane is on its own, far above all but the most minute traces of atmosphere.

The pilot uses the aircraft's own rocket to add whatever power is needed to put it on the correct flight path, and then switches off the engine and begins gliding around the Earth at almost the speed of a satellite. Special instruments tell him he is on course for the airfield at which he will land, although it is still several thousand miles away. Travelling at over 250 miles a minute, it takes little time to cover the distance and soon he must attempt the most hazardous part of the flight—re-entry into the atmosphere.



As the Dyna-Soar re-enters the Earth's atmosphere after a flight into space, its leading edges will glow from the heat created by the friction of the glider passing into the atmosphere.

Using tiny rocket jets to control the glider's attitude in space he begins to arch down into the shadowy fringe of the atmosphere. At such a speed, even this is solid enough to create friction which makes the leading-edges of the aircraft glow with heat. Carefully the pilot controls the descent to prevent the heat from becoming too intense and his speed begins to fall off rapidly.

*When he enters the denser atmosphere, below a height of ten miles, his aircraft handles as easily and smoothly as a jet-fighter, because it weighs very little with its fuel burned-up and so he has little difficulty in bringing it in to a gentle, if fast, touch-down on the long runway. Back at Cape Canaveral, the launch control officer notes "Mission completed successfully" in his log and prepares to go home to bed.*

Before that day arrives, there is much to be done. As prime contractor for Dyna-Soar, under the supervision of the U.S.A.F. and with the advice and assistance of the National Aeronautics and Space Administration, the Boeing Airplane Company will first build and test an aircraft able to bring back a man to a normal landing from hypersonic speeds.

### Exploring the problems

Later, the Dyna-Soar itself will probably make its first flights after being launched in mid-air from a B-52 "mother-plane", like the X-15. Gliders will be fired down the Atlantic missile range, first unmanned and then with a man on board, to explore the problems of controlled flight at speeds up to 15,000 m.p.h. Finally, after an estimated £170 million has been spent, will come the first proper Dyna-Soar launching. What will it achieve? The U.S.A.F.'s main interest is, no doubt, in Dyna-Soar's possibilities as a reconnaissance aircraft, able to circle the Earth once or twice and take photographs on the way round. Later, it could be developed into a bomber.

We must hope, however, that by the time this could happen military reconnaissance and bombers will be things of the past. The dinosaurs of pre-historic times died out because their bodies were too big and their brains too small. "Dyna-Soar" is pronounced in the same way as "dinosaur" and this should serve as a reminder that our own brains, clever enough to set us on the road to the greatest adventure of all time, ought not to be devoted to ensuring our extinction in war.

**The Boys' Book of Sailing**, by Gilbert Hackforth-Jones (Burke Publishing Co. Ltd., price 10/6d), gives expert advice to youngsters on everything they need to know about the thrilling pastime of yachting. Beautifully illustrated, it relates the story of sailing in graphic fashion, outlines various types of craft, discusses such things as navigation and tides, and has a dictionary of sailing terms.



## From Our Readers

*This page is reserved for articles from our readers. Contributions not exceeding 500 words in length are invited on any subject of which the writer has special knowledge or experience. These should be written neatly on one side of the paper only, and should be accompanied if possible by original photographs for use as illustrations. Articles published will be paid for. Statements in articles submitted are accepted as being in good faith, but the Editor takes no responsibility for their accuracy.*

### MEASUREMENTS IN MILES —AND YARDS

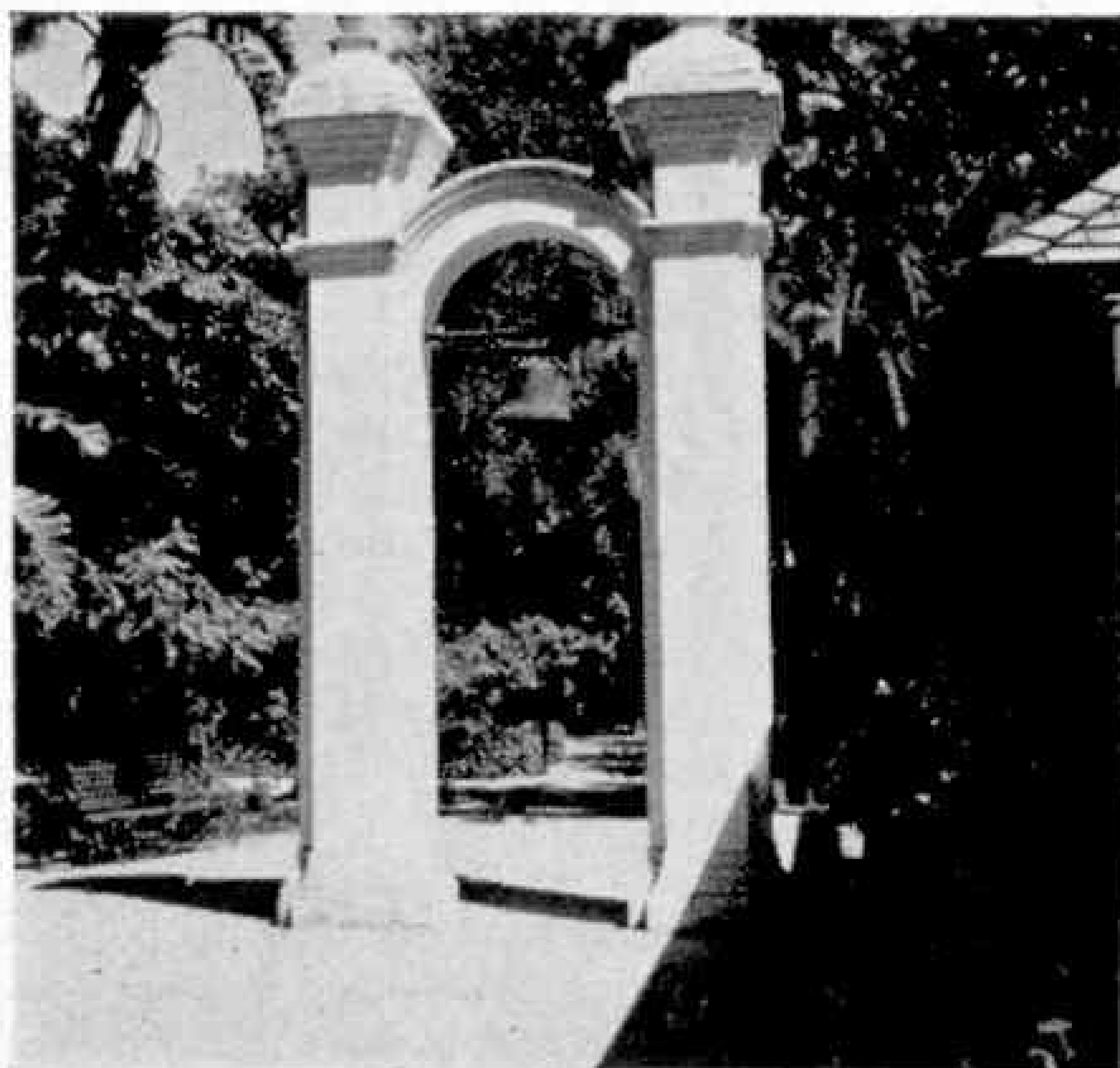
WHILE on holiday in Pembrokeshire, this year, we were travelling on the road from Haverfordwest to Milford Haven when we came across a series of milestones—such as the one illustrated in the accompanying photograph—situated at regular intervals of one mile. On the one side they gave the distance in miles to Haverfordwest, and on the other side the distance in miles and yards to Milford Haven. This type of milestone, which gives information to such an accurate degree, is quite common in this area, and we noted several other instances of it.

Does any other reader know of similar milestones in any other part of England and Wales?

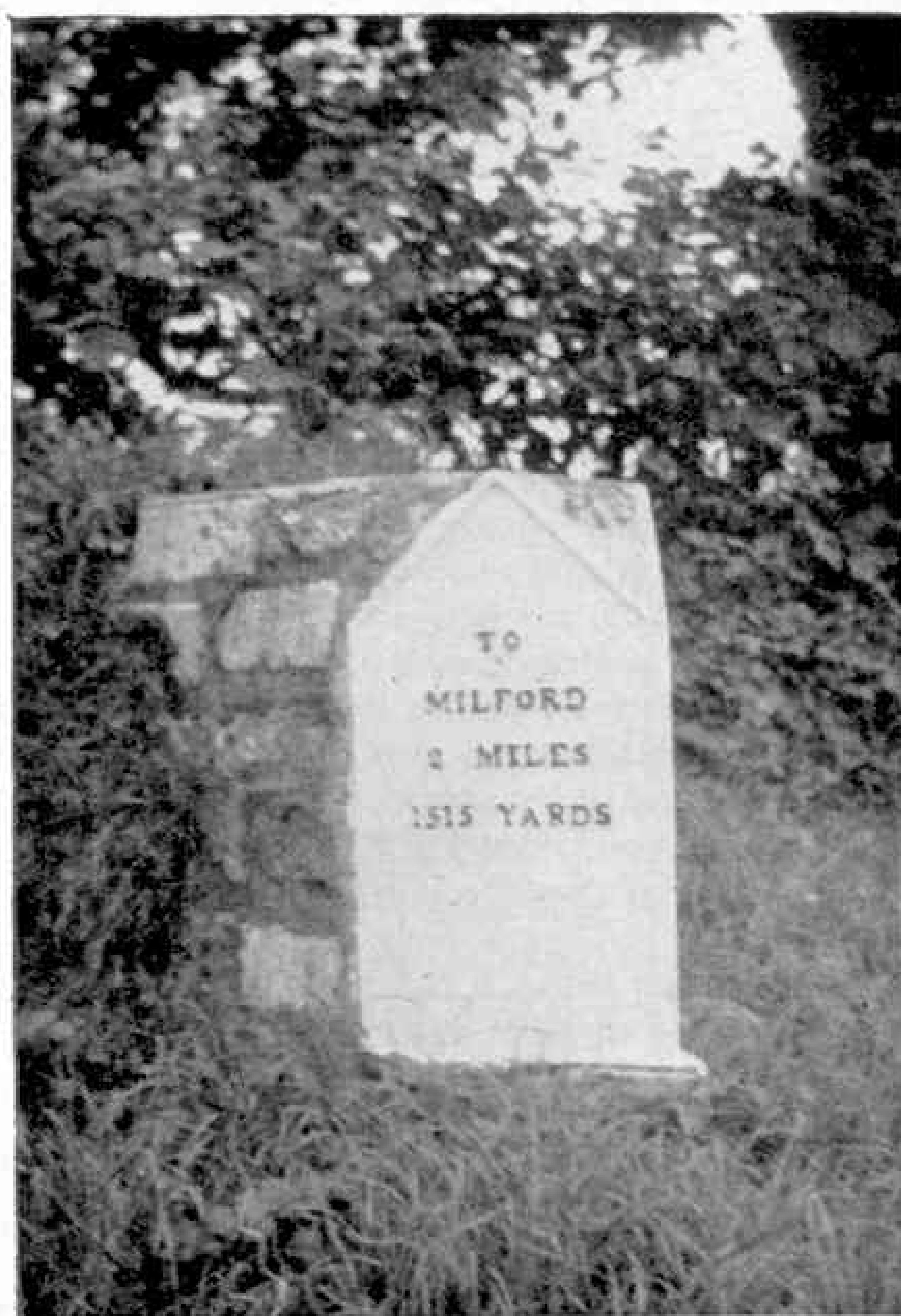
J. B. PAUL (Burton-on-Trent).

### AN OLD SLAVE BELL

Situated in a rather inappropriate place—the Cape Town Municipal Gardens—is this old slave bell, a relic of the days when colonisation and slave traffic was in vogue. It is part of a monument which is still kept in good repair and which stands about 20 feet high, with whitewashed pillars. The bell was erected well over 100 years ago to bring slaves together for meals or at the



The old slave bell at Cape Town.



Distance in precise terms—near Milford Haven.

end of their day's work. The slaves in question were generally employed on the vegetable gardens, whose products were used for victualling the ships on the long pull to the Far East.

In a very different way it still marks the end of the day. At sunset, the gardens are closed and the bell is rung as a warning to people who might otherwise be locked in when the gates are closed.

After the emancipation of slaves, the bell was used by Governor Charles Somerset to summon his workers who, at that time, were employed in his 11-acre garden, which now constitutes the present park.

The monument, with its old slave bell, is always an object of great interest to tourists and other sightseers visiting these beautiful gardens.

A. GORDON MACMAHON (Plumstead, South Africa).

ARTHUR NETTLETON,  
*Conjuring up visions of Christmas Past,*  
*tells the story of*

## Dickensian England

NO author has done more than Charles Dickens to spread the true spirit of Christmas. His novels in general reflect the goodwill and companionship which are features of our Yuletide celebrations today, and graphic descriptions of such festivities appear particularly in *A Christmas Carol* and *The Pickwick Papers*.

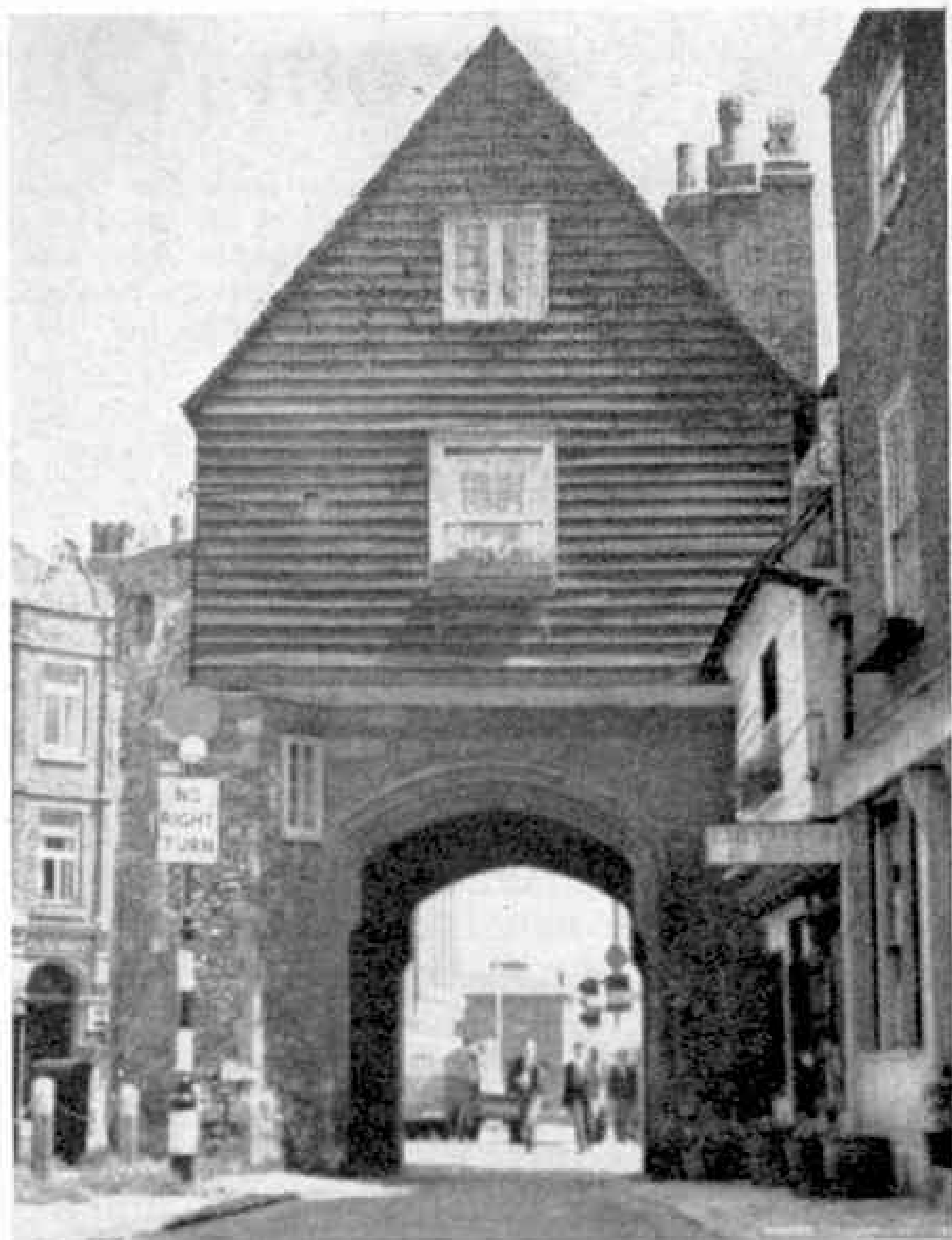
Christmas is thus a suitable time to look at some places associated with this great Victorian writer and his novels. Road travel, especially by stagecoach, is prominent in them, for when Dickens was a young man the era of stagecoaching was still with us.

The novelist himself made many journeys by that mode of transport, and so was able to describe, from first-hand knowledge, the conditions met by travellers who went by road before the motor car was invented. It so happened, also, that his young days coincided with a series of severe winters, and so he had an ample source of authentic material when he came to write about White Christmases.

### Chilly coach ride

The weather in *A Christmas Carol* is described as "cold, bleak, and biting", with people stamping their feet and beating their chests as they hurry along the foggy streets on Christmas Eve. In *The Pickwick Papers* the members of the Pickwick Club have a chilly coach journey down to Dingley Dell, but on Christmas Day they enjoy themselves skating on the ice. They have a fine dinner, with music and dancing, and later listen to ghost stories told by Mr. Wardle. Dingley Dell still exists—a short drive from Maidstone, in Kent. Dickens is said to have had Cobtree Manor in mind when he wrote this part of his novel.

Old inns appear prominently in his various stories, and many a quaint hostelry today claims literary fame because Dickens peopled it with fictitious, colourful characters.



Chertsey Gate, Rochester, which figures in *Edwin Drood*.

If there is any one district which can rightly be called the Dickens Country it is to be found around Rochester, Kent, although no matter where you live in England you will probably find that some place with Dickensian links is not very far away. Charles Dickens lived for a period at Gads Hill, near Rochester, and introduced many surrounding scenes and buildings into his novels. His last (unfinished) novel, *Edwin Drood*, partly concerns Chertsey Gate at Rochester, an archway leading to the cathedral. The little wooden house over the arch was the home of Jasper in the story, and was the place where he was murdered.

The Christmas spirit of charity is emphasised in *Seven Poor Travellers*, and Dickens based this on a Rochester institution known as Watts' Charity, founded nearly 400 years ago by a local benefactor, Richard Watts, who left money for the purchase of an almshouse.

The building, which you can still see if you go along the High Street, Rochester, was already in existence at that time, but Richard Watts provided for it to be bought and adapted as *six* self-contained apartments for wayfarers passing through the town. Just why Dickens added a seventh traveller for good measure is now unknown.

Probably the most famous of all the inns





A famous Pickwickian inn—the Leather Bottle at Cobham, Kent.

described by Dickens is the Leather Bottle, at Cobham, although more than 50 inns are mentioned in *The Pickwick Papers* alone.

The sign outside the Leather Bottle bears a portrait of the immortal Mr. Pickwick, and at one corner of the building is the stone inscribed BILST UMPSHI SMARK, which aroused Pickwick's curiosity. Eventually he realised that it really read BILL STUMPS—HIS MARK.

In *Nicholas Nickleby*, Dickens gives a most graphic description of a winter stagecoach journey along the Great North Road to Dotheboys Hall, Bowes, Yorkshire, and in the village churchyard there can be seen the gravestone of a boy which prompted the novelist to investigate the sordid conditions at schools such as that described in this famous tale.

To get the information he needed, he and a friend from Malton visited various schools on the pretext of finding an imaginary boy. In this way, the novelist was able to get a peep behind the scenes, and collect material for his story.

The Bull Hotel, Rochester, may be the inn about which Mr. Jingle (*Pickwick Papers*) told an amusing story. The building has a low arch through which stagecoaches used to enter the courtyard,

and Mr. Jingle described it, in these terse and memorable terms, as a trap for passengers riding on top of the vehicles.

"Heads, heads, take care of your heads!—Terrible place—dangerous work—other day—five children—mother—tall lady, eating sandwiches—forgot the arch—crash—knock—children look round—mother's head off—sandwich in her hand—no mouth to put it in—head of family off—shocking—shocking."

Inns apart, you will find a number of spots in London which attract Dickens fans. Just off Kingsway is the building reputed to be the original Old Curiosity Shop which the novelist made famous.

### Now a museum

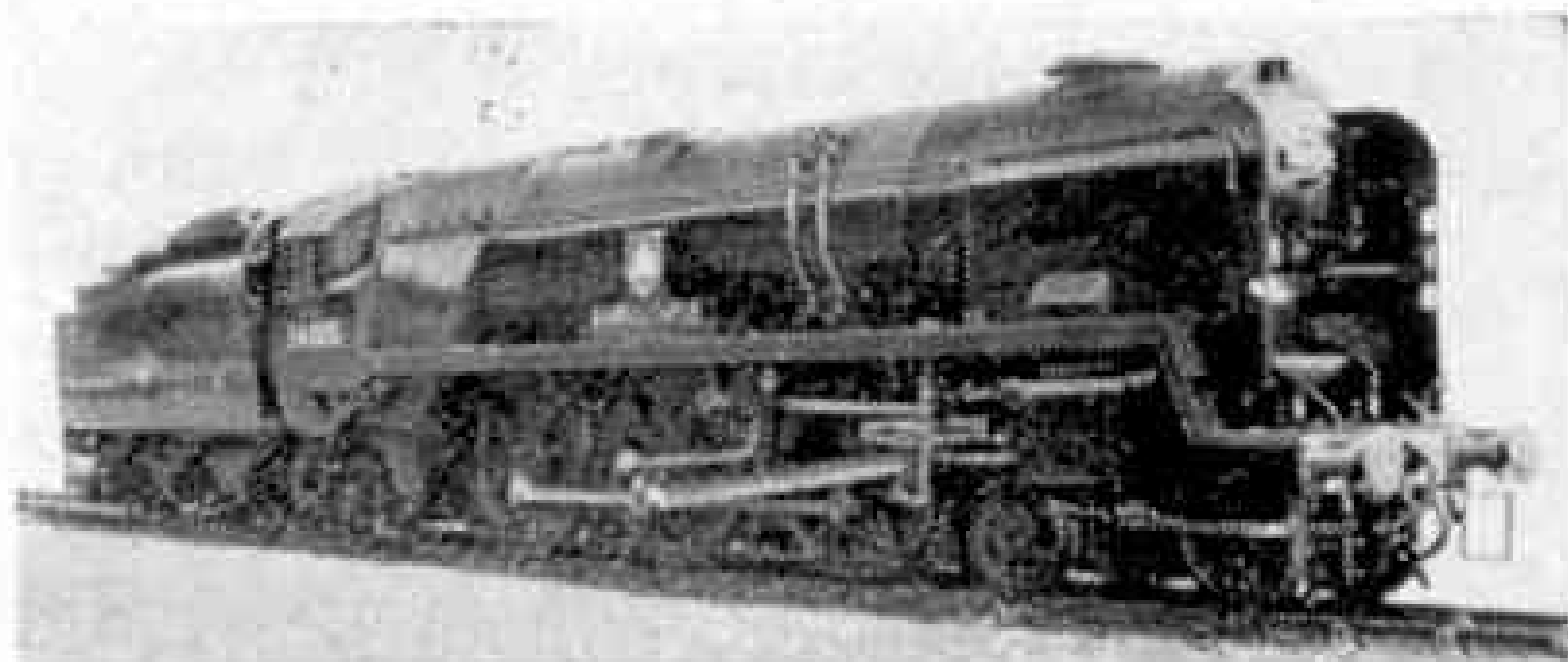
The house where he wrote some of his novels, in Doughty Street, Bloomsbury, is now a museum of Dickens souvenirs. It also houses the world's biggest library of books about the famous novelist.

His story *A Christmas Carol*, however, was written when he was living at No. 1 Devonshire Place, near Regent's Park. He lived there for twelve years, and among the other books he wrote during that time was *David Copperfield*. In fact, scenes about London appear in all his books, and he described them in such detail that many of them can be recognised from his descriptions.

(Continued on page 639)



The house in Doughty Street, London, where Dickens wrote some of his novels.



## Railway Notes

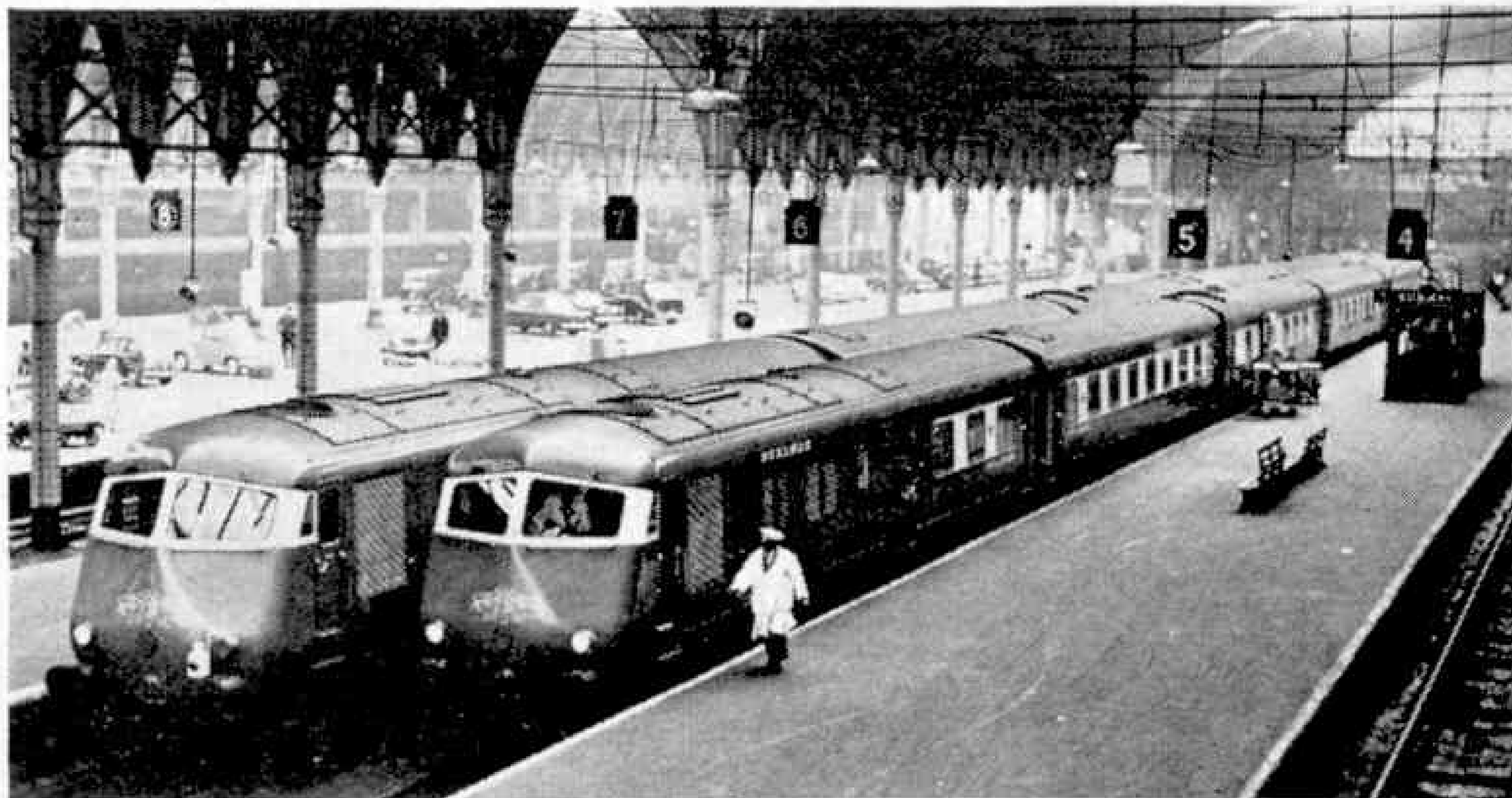
Contributed by R. A. H. Weight

### ***W.R. Diesel Pullmans In Action***

THE two unique, impressive 8-car multiple-unit diesel Pullman services I described in October arrive at Paddington soon after 9.30 a.m. on their first journeys respectively from Wolverhampton (via Birmingham) and Bristol. They depart on their second return runs at 4.50 and 4.55 p.m. and were standing side by side in Nos.

water troughs, a careful passage of Beaconsfield Station, where downhill speed could have been high, via the platform line to pass a freight train parked on the main track, slowings near Haddenham and Banbury, as well as the usual restrictions through High Wycombe, etc. which were carefully observed.

The two W.R. diesel Pullmans side by side at Paddington. The "Birmingham Pullman" is on the left of this picture taken by M. Edwards.



5-6 platforms, quickly filling, when I made my first look-round inside and outside the *Birmingham Pullman* which was to take me to Leamington Spa, the first stop.

All seats on these journeys are reserved and mine was in the leading 2nd-class car where there was, perhaps, slightly more oscillation over some of the many curves and junctions; also a faintly audible whirr at times of the diesel engine; but it was a most comfortable and quiet ride, the whole outfit being very choice!

We glided gently out of Paddington, but signals were not clear at a busy time and we were almost stopped near the third mile post before crossing from the main line to Reading and beyond to that for the north, at Old Oak West Box. The rapid acceleration and hill-climbing capacity proved invaluable as there were several other delays to come: a repair slack over Ruislip

In between, on rising grades we had been up to 78 m.p.h. beyond Greenford, only five and a half miles from Old Oak; 70 past Gerrards Cross and, probably utilising the full 2,000 h.p. with the engines well warmed up, ascended the five miles mainly at 1 in 200 to Ardley, Oxfordshire, at a steady 80. Just before that the downhill maximum near Brill was about 88 m.p.h., leading to a concluding 80 then a slight easing as the day was won. So, following a two-tone whistle flourish, the Pullman drew up smoothly and almost noiselessly at Leamington, which I had never reached previously in less than an hour and a half. We were slightly before time: 87½ miles in 88½ minutes, equivalent, without the extra slowings, to an 80-minute, 65½ m.p.h. over-all run. Still nearly full, the "Blue Train" soon went on to Solihull, Birmingham and Wolverhampton.



### Via Banbury and Oxford

As many readers may remember from previous references in these Notes, or know from personal observation, Banbury on the W.R. north main line, where there is a fine new station and marshalling yard, is a key point for long-distance, cross-country services, both passenger and freight. As on so many principal routes, the number of trains in the former category on summer Saturdays increases at least three-fold. There are then through holiday trains to and from the coast resorts extending from Margate, in Kent, to Devonshire and South Wales, and operating inland to and from the Birmingham-Wolverhampton area to a large extent, or beyond to Chester or Birkenhead. Others by way of the Banbury-Woodford Halse connecting link take the former G.C. route to and from Leicester, Nottingham, Sheffield and the N.E. Region.

Through trains and portions also run between Paddington and Central Wales, as part of the London-Birmingham-Shrewsbury express service, by way of Bicester and High Wycombe—a route used by some of the through Kent and Sussex trains. Even so, the majority of the numerous and far-flung "cross-countries" travel south of Banbury via Oxford and one side or other of the Didcot triangle, the greater number traversing the east

The slip coach has arrived at Bicester and the writer of these notes is watching operations after alighting. This and the photograph on the next page are by C. A. Gostling.

side on to the four-track W.R. main line as far as Reading West, thence to Basingstoke and S.R. tracks for Bournemouth or Portsmouth; or through Reading main station, whence they diverge to the Southern Guildford-Redhill line on the way to Sussex and Kent. There are also the through London-Worcester line expresses and stopping trains using the hard-pressed Oxford Station—with its limited platform accommodation—and a number of secondary and local services, steam or multiple-unit diesel.

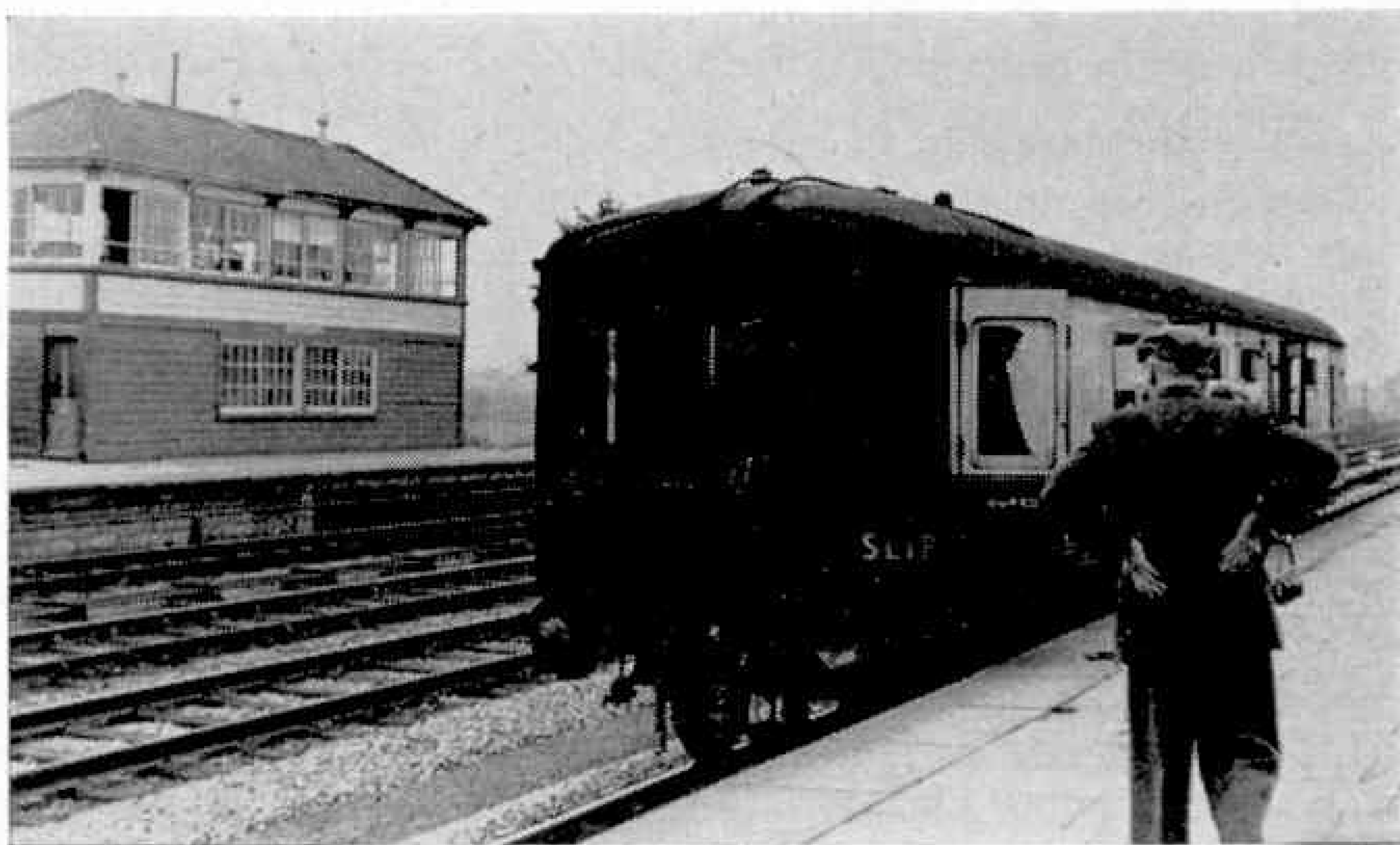
While observing at Banbury, then at

Oxford, on a busy July Saturday I noted among lots of interesting all-steam, cross-country train workings a good many Hall 4-6-0s and 6300 class 2-6-0s as well as representatives in smaller numbers of Castle, County and Grange 4-6-0s, all W.R. There were E.R. B1 4-6-0s handing over to Halls or vice versa; and S.R. West Country 4-6-2s, Lord Nelson or King Arthur 4-6-0s exchanging at Oxford with W.R. 4-6-0s. Then there were also a few B.R. Standard 4-6-0s (I travelled from Banbury to Oxford behind No. 73117 in a Wolverhampton-Weymouth train) and Kings, on the heaviest Paddington expresses through Banbury.

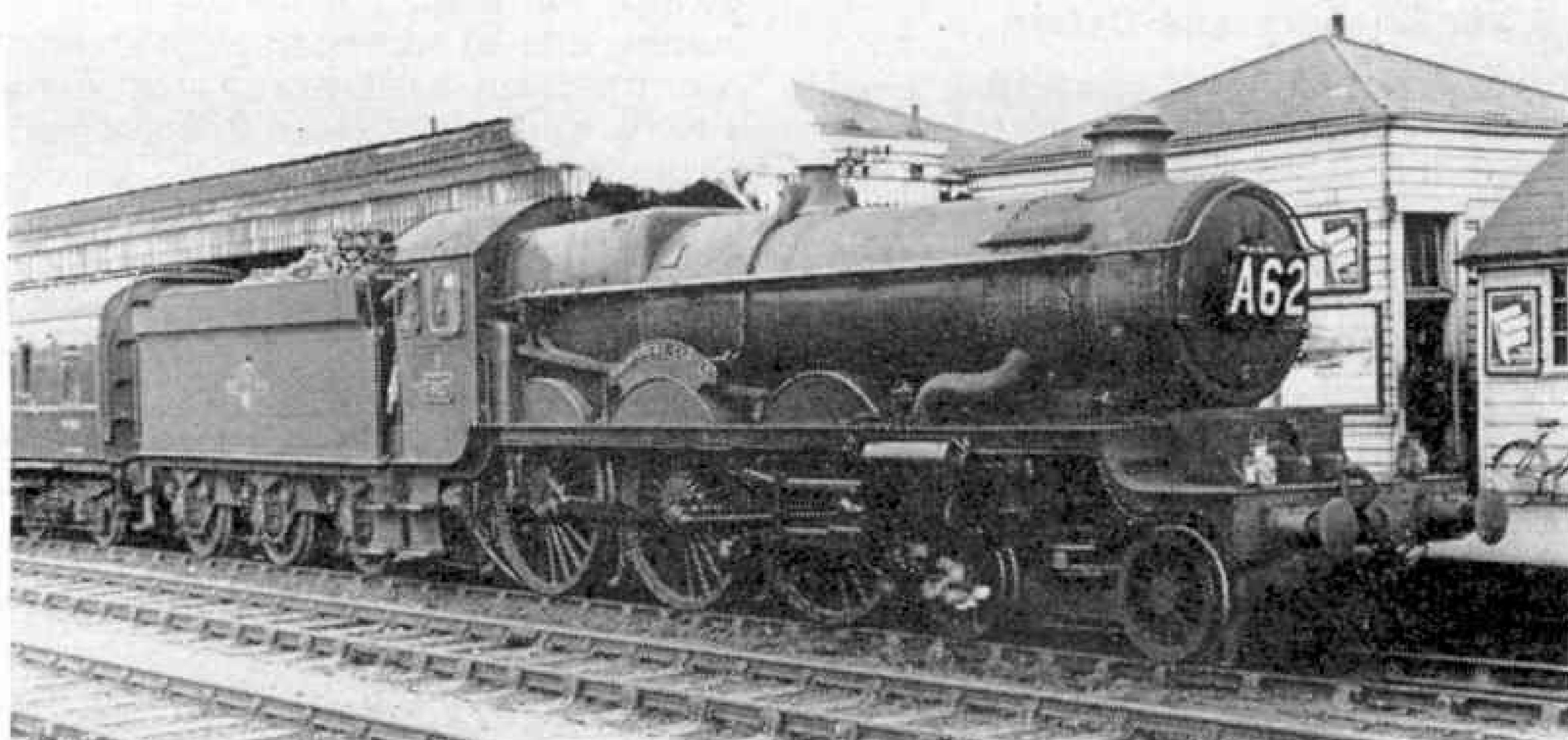
My old friend C. A. Gostling took the photograph on page 606 of *Thornbury Castle* and we boarded the next similar express from Hereford-Worcester for London worked by *Lydford Castle*.

### Glasgow Electric Services

Early last month electric train services were inaugurated between Glasgow and stations on the north bank of the Clyde. Employing the latest overhead wiring traction, with an A.C. high voltage supply, the services extend over the 35 miles between Airdrie and Helensburgh, where



there are ship connections to island, loch and estuary piers. All-day trains also serve the Springburn, Bridgeton, Milngavie and Balloch branches and the industrial Clyde loop. They were brought into being after many months of intensive constructional and technical preparation followed by crew training and trial runs, and even a full service dress rehearsal, before the official opening on November 7. The service operates at frequent regular intervals with



No. 7027 "Thornbury Castle" at Oxford ready for a non-stop run to Paddington.

fast three-car or six-car train sets in smart blue livery. There are automatic sliding doors in the cars similar to those used on London Transport trains, and no train can start unless all the doors are fully closed.

Travellers will soon be familiar with the *Glasgow Electric* double symbol; yellow indications for westbound trains, blue for eastbound. The new timetables are a model of simplicity and clarity; Sunday services are far more frequent than hitherto, all trains are one class only and there are cheap-ticket facilities from all stations.

### No More Slip Carriages

The 100-year old plan of detaching one or more carriages at speed or without the train stopping had always been largely a British practice. About 50 years ago, for instance, there were many daily examples of such one-way service on various main lines, especially on what was then the Great Western Railway. It was this system, now Western Region, that operated the few "slips" restored when normal services were resumed after the second World War.

In these notes during 1954 I described journeys made in one day in slip carriages covering 165 miles, attached to the down *Cornish Riviera Limited* for Westbury, and to the 1.50 Bristol-Paddington. On the up journey we were detached at Reading, a busy station which once received many slip carriages. Those workings disappeared, however, and the "last slip" (withdrawn in September, 1960) was made from the rear of the 5.10 p.m. Paddington-Wolverhampton express as it approached Bicester at speed about 6.12 p.m., 53 miles from London. At Bicester, the main train usually passed on the centre track, the slip coach, with special couplings and brake

apparatus, following and stopping within the station area. It was then picked up by the engine of a waiting slow train, brought to the platform and attached to go forward to Banbury, thus becoming a through carriage to that town not served by the main train.

The 5.10 now stops at Bicester. When I was recently aboard it was a full 13-coach train headed by No. 6017 *King Edward IV*. There was a special precautionary stop at High Wycombe, then a spell of 80 m.p.h. travel along the stretch where the *Birmingham Pullman*, referred to earlier, made its highest speed, to regain some time.

Slip carriage accommodation was necessarily limited. The vehicles had to be kept strictly to rosters and returned to the starting point on stopping trains. An extra guard was needed and so economic circumstances led to the system's extinction.

When the practice was in being, the slip guard, at an appropriate point made familiar by experience, pulled a lever in his compartment causing a hinged hook to drop, releasing the main coupling and also applying the brake to the slip coach to retard its speed. Steam heat and vacuum hose pipes divided and special adaptors sealed them automatically so that the main train could proceed normally, being soon well ahead. The slip guard then controlled the slip coach and brought it to a stand at the required point with remaining vacuum brake power, and a hand brake, if the latter were needed. Sometimes up to three passenger coaches or other vehicles were attached behind the slip carriage and were detached from the main train with it.

Methods in earlier days were more crude, it appears. There were no continuous brakes, and the coupling was detached by pulling a rope.



# Books for the Holiday

**THE LONDON AND NORTH WESTERN RAILWAY**, by O. S. Nock, B.Sc., Ian Allan, price 30s. The London and North Western Railway, often referred to simply as the "North Western", was founded in 1846 as the result of an important amalgamation. Following this fusion came a long period of further development whereby the Euston empire and its interests spread far and wide.

The book does not claim to be a detailed history of the line; rather does the author show the changing picture down the years of what was then Britain's greatest railway in action. The engineering features of its different routes, traffic developments and marine activities are all described and, deservedly, its signalling equipment also receives attention. Expansion of facilities in different districts for handling the ever-increasing traffic are given attention, and the electrification of suburban routes in the London area and other improvements are necessarily included.

Naturally, considerable reference is made to the activities of Crewe Works, where there were manufactured not only the hard-working locomotives but practically all other railway equipment, including rails for what was claimed to be the "Best Permanent Way in the World," signals, and a host of other things. It is pleasing to see that, in addition to locomotives and their performances, attention is also devoted to coaching stock produced at Wolverton, in which, as in many other things, the North Western incorporated numerous individual features. But wagon stock, which was plentiful and varied, is not specially featured, although it is not easy to cover everything in a book of just over 220 pages. On the other hand, the effort of the company during the 1914-18 war is not forgotten. The book is well illustrated and includes an attractive coloured frontispiece.

\* \* \* \*

**ABC HELICOPTERS**, by John W. R. Taylor. Mr. John Taylor, an outstanding writer in the field of aviation, and for many years the regular contributor of Air Notes to the *Meccano Magazine*, has made a fine job of this re-issue of *ABC Helicopters*. Five years have elapsed between this edition and the last and, in that time, as

Mr. Taylor says in his introduction, the helicopter has made tremendous progress and big technical changes have taken place. This small yet comprehensive volume, published by Ian Allan Ltd., at 2s. 6d., contains over 120 pictures, many of most unusual aircraft, and the text is informative and to the point. The book also covers such items as hovercraft and "flying jeeps".

\* \* \* \*

**THE BOOK OF ELECTRICITY**, by Geoffrey Gerard, A.M.I.E.E., F.R.S.E., Frederick Warne & Co. Ltd., price 10s. 6d. This is a revised edition of a work which comprehensively outlines the many and varied uses of electricity in this modern age. The young electrician will find it a valuable work of reference which deals, among other subjects, with accumulators, units of measurement, dynamos and motors, electric vehicles and atomic power. The text is profusely illustrated with diagrams, sketches and plates.

In **Coal Mines and Miners**, Miles Tomalin traces the history of coal from the days before the dawn of civilisation to the present. It is a story of achievement, with emphasis on the development of mining methods, and is packed with information which is presented in a very readable manner. The illustrations show in graphic form the conditions under which coal was once hewed from the earth. Modern conditions present a startling contrast. One of a series of "delights" published by Methuen, this interesting volume is also priced 10s. 6d.

Richard Irving, who is a Fellow of the College of Handicraft, has produced in **Metalwork, Step by Step** a thoroughly practical book on a popular subject. In five main sections the book, published by Frederick Warne and Co. Ltd., at 15s., takes the reader in detailed fashion through Bench Work, Sheet Metalwork, Beaten Metalwork, Forge Work and Lathe Work. There are close on 1,300 drawings and sketches and the text, which is presented with great clarity, includes 50 jobs for beginners. From it you can learn how to make such useful items as an ash tray, an aluminium caddy spoon, a brass or copper posy jug or a tinplate pencil box.

# CHRISTMAS CONUNDRUMS

**No 1** SIMON THE CELLARER WAS ASKED TO FETCH EXACTLY 4 PINTS OF CHRISTMAS WINE, BUT HIS ONLY MEASURES WERE A 5-PINT JUG AND A 3-PINT JUG. HOW DID HE SOLVE THE PROBLEM?



**No 2** A FARMER WITH A VERY SMALL BOAT HAD TO CROSS A RIVER WITH A FOX, A CHRISTMAS GOOSE, AND A BASKET OF CORN. HE DARE NOT LEAVE THE GOOSE WITH THE CORN OR LEAVE FOX AND GOOSE TOGETHER. HOW DID HE, TAKING ONE AT A TIME, GET THEM ACROSS?



**No 3** ARRANGE NUMBERS 1-7 SO THAT THEY ADD UP TO 100



**No 4** PLACE 4 BRAZIL NUTS AND 4 WALNUTS IN A ROW. THUS:-



NOW MOVE THEM, TWO ADJACENT NUTS AT A TIME, SO THAT IN FOUR MOVES THEY LOOK LIKE THIS-



**No 5** MAKE THE FOLLOWING LETTERS INTO A SENTENCE BY ADDING ONE VOWEL REPEATED AS MANY TIMES AS YOU LIKE.

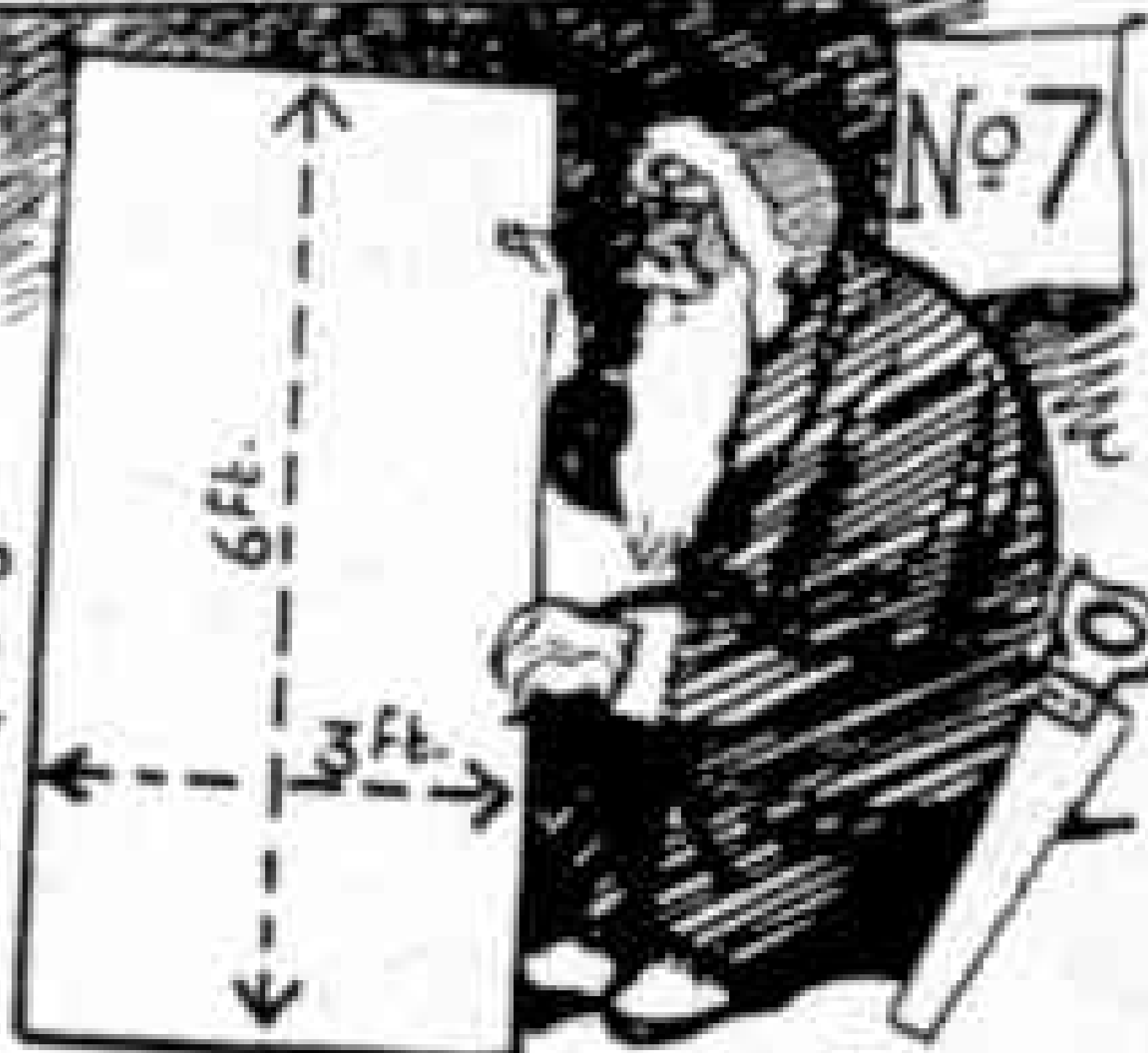
G D L D P R T F R R T H D X X F R D D N S



**No 6** SET OUT 12 COINS AS SHOWN THEN - WITHOUT ADDING OR SUBTRACTING ANY - ARRANGE THEM IN A FIGURE WITH 5 ON A SIDE INSTEAD OF 4-



**No 7** SANTA WISHED TO CUT A BOARD, 3 FT. WIDE BY 6 FT. LONG, INTO TWO PIECES SO THAT, SPLICED TOGETHER, THEY WOULD MAKE A BOARD 9 FT. LONG BY 2 FT. WIDE. HOW DID HE DO IT?



SOLUTIONS AT FOOT OF PAGE 613

**THE IAN ALLAN BOOK OF MODEL RAILWAYS**, by Mike Bryant, price 10s. 6d. This book is intended for the younger enthusiast, whether he has already begun a miniature railway system, or is still thinking of doing so, but the more experienced model railwayman will find much of interest in its pages. It imparts a great deal of information in an easy-to-read manner and, as a practical modeller, the author is well able to advise on the tools, materials and so on that are likely to be needed by the enthusiast who wishes to make some things and to buy others. Special attention is given throughout the different chapters of the book to miniature railway products that can be bought in finished form ready to work, or as kits to be assembled at home.

There are various references to the Hornby-Dublo Two-Rail and Three-Rail systems and there are several attractive illustrations in which Hornby-Dublo Locomotives and Rolling Stock appear.

Apart from these general characteristics, consideration is given section by section to such things as the popular scales and gauges used in miniature railway work today and the effect of the scale chosen on the location and planning of layouts. Then baseboard construction makes an important and essential feature. So we pass to detail improvements that can be made to the track and to locomotives, rolling stock and other items, while the useful and welcome information on scenic treatment and lineside realism answers many of the questions that crop up in these aspects of layout development.

Sections on wiring and controls, layout operation and narrow gauge modelling complete a useful and attractive publication which is very well illustrated by photographs and sketches and, in view of the age group at which it is aimed, moderately priced.

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Our front cover this month is based on a transparency taken by CYRIL E. WILSON who, in this article, describes the delights of a trip by Swiss cable car.

## *Aerial Jaunt By Bubble-Car*

**D**URING the winter months from December to April, the Swiss mountain railways are kept busily at work. From dawn to dusk, day in, day out, weekdays and Sundays, the vehicles climb the steep, snow-covered mountain sides packed to capacity on the ascent and almost empty on the downward run.

Hordes of skiers streaming into popular resorts such as Davos, Wengen, Grindelwald and St. Moritz join the queue for the nearest cable railway or "Luftseilbahn". I was recently in Davos and found that the time spent in queueing, scrambling for a place on the train and the journey itself was about three times that required for the downward run on ski back to the valley.

Probably the most famous of all Swiss mountain railways for winter sports grounds is the Parsenn Bahn which rises from Davos-Dorf to the Weissfluhjoch. It is in two sections, is over 13,400 feet in length and rises to a height of approximately 3,600 feet above Davos-Dorf. In winter all the seats are removed and passengers are packed in like sardines.

From the top station I walked through a tunnel in the rock to the bottom station of the aerial cableway which was to take me to the summit of the Weissfluh. I watched a car about to depart. Containing some 40 passengers and their equipment it swung dizzily across the chasm 200 ft. above the ant-like figures of the skiers on the snow below. The view from the summit was spectacular in the extreme; row after row of the serrated peaks of the Engadine Alps stretched away in all directions.

From Davos-Platz, the other half of the village of Davos, a mountain railway ascends to Schatzalp and the Strela Pass. The first section climbs steeply through the woods with a gradient of 1 in 2. This is an ordinary cable railway in which one car goes up as the other car goes down—a system which needs comparatively little power as the cars counterbalance each

**R i g h t :**  
From this angle the fibre glass aerial car looks like a huge floating teapot as it moves through the air.



other. From Schatzalp, however, the mode of transport is much more spectacular. Whereas the cable car to that point takes you up 975 feet in five minutes, from that point onwards you glide through the air for another 1,500 feet—a 10-minute trip—in one of the most delightful forms of transport in Switzerland. The aerial cableway on the upper section is equipped with bright red, fibre-glass bubble cars each seating two passengers, face to face. The cars are suspended from 40-foot high steel pylons and move up and down on an endless cable.

What an exhilarating feeling it is to soar smoothly upwards in your own aerial bubble car, like a Sputnik travelling across the face of the earth, while down below the toy-like church and chalets of Davos recede into the distance. At the top, after you have alighted, the cars swing round a U-shaped overhead rail and travel back to the bottom station to bring up more passengers. Bubble cars not immediately required are shunted on to an overhead siding ready for use during peak periods.

Of all the mountain railways in this vicinity, only one takes you the whole way by aerial car from the valley floor, and that is the one to the summit of the Jakobshorn. It is a large car, holding about 40 people when full on a cable 3,500 yards long and it ascends by way of the relay station at Ischalp, situated at a height of 6,253 feet, to the top of the mountain, which is 8,424 feet high. Davos-Platz, the bottom station on this ride, is at a height of 5,020 feet. It is this fascinating cable ride which is illustrated on the front cover of the Magazine.

# Balloon Men Blown Across the Channel

By  
John W. R. Taylor

THIS year marked the 175th Anniversary of the first aerial crossing of the English Channel, by Jean-Pierre Blanchard and Dr. Jeffries in a *Montgolfière* hot-air balloon. To commemorate this in an appropriate way, two modern balloonists, Koen Jansen of Holland and Alfred Eckert of Germany, repeated the exploit on September 2 in a 75-ft. diameter yellow balloon named *Augusta VIII*.

More than 300 spectators watched the preparations for the flight from Ferryfield Airport, Kent, and many of them were recruited to hold guy ropes and stays as fierce gusts of wind threatened to sweep the balloon away prematurely.

The skilled task of inflating the 37,000 cu. ft. cotton fabric envelope was done by

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## AIR NEWS

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specialists from British Oxygen Gases Ltd. They used 74 cylinders of hydrogen during the filling operation, which took a little over three hours.

*Augusta VIII* took off in a 20-knot wind and rapidly reached 8,000 ft., the altitude it maintained for most of the 4½-hour voyage. The balloonists, who travelled in a 5 ft. by 4 ft. wicker basket, had hoped to land in the region of Calais, as Blanchard did; but a strong wind blew them 100 miles off course and the flight ended near Oostkamp, some five miles south of Bruges, in Belgium. It was a far from gentle touch-down, as the balloon collided with a tree and the basket crashed to the ground. Fortunately, the occupants escaped with nothing more than a shaking.

### Proposal to build VTOL Argosy

Armstrong Whitworth have proposed building a vertical take-off and landing



The balloon "Augusta VIII" shortly after take-off from Ferryfield Airport, Kent. Illustration by courtesy of the British Oxygen Company Limited.

(VTOL) version of the Argosy transport which would be able to land in any place where a helicopter could go.

Instead of the usual four Dart turboprops, the VTOL Argosy would have only two of the more powerful Tyne turboprops, in the inner nacelles. Where the outer Darts are now fitted there would be two underwing pods, each containing 20 Rolls-Royce jet-lift engines for use during take-off and landing. In each pod the engines would be grouped in two clusters, fore and aft, so that they could also be used to provide control and stability during vertical and hovering flight.

Initially, the VTOL Argosy is being offered for use as a military assault transport; but it would bring us one step nearer to the day when airliners will take off and land vertically in all weathers and so make flying very much safer.

### A missile faster than time!

A speed record that will be impossible to beat was set up recently by a Terrier anti-aircraft guided missile fired from the U.S. cruiser *Canberra*. The missile actually hit its target the day before it was launched!

The *Canberra* was sailing in the Pacific,





A Porsche Spyder sports car being lifted into a Super Constellation freighter of Seaboard & Western Airlines, U.S.A. The car, with spares, weighed over 1,300 pounds.

near the International Date Line, at the time. Her crew fired the Terrier from west of the Line and it hit its target east of the Line. So, as it was launched on Monday, it hit the target on Sunday.

### Meet the Macerschmitt!

American home-built aeroplanes often have names as peculiar as their shapes. For example, the latest types of which I have received pictures include the *Sweet Patootie*, the *Little Monster* and the *Kee Bird*—named after a mythical bird which sits on the North Pole shrieking "Kee, Kee, Kee-rikey, it's cold up here!"

Another is the single-seat *Macerschmitt*, illustrated at the foot of this page, and named after its designer and builder, Harvey Mace of Clarksburg, California. Of striking appearance, it has a fabric-covered steel-tube fuselage, plywood-covered wooden wings and a 125 h.p. Lycoming O-290 engine. With a pilot

The *Macerschmitt*, an American home-built single-seater aeroplane described on this page. Photograph by John W. Underwood, U.S.A.



and sufficient fuel for 500 miles' flying, it has a top speed of 170 m.p.h. and will climb at the rate of 2,000 ft. per min. Wing span is only 16 ft. 6 ins. and length 17 ft. 9 ins.

### 300 m.p.h. sports car

However fast they go on the ground, most modern Grand Prix and sports racing cars travel even faster between contests, because air-lifting has become the recognised method of getting them from circuit to circuit.

Silver City have carried almost all the well-known racing cars and drivers between Britain and the Continent at some time or other. Even transatlantic flights are commonplace, to avoid the risk of damage or delay inevitable with surface transport, and the upper picture on this page shows a Porsche Spyder sports car being loaded on board a Super Constellation freighter of Seaboard & Western Airlines. Weighing over

1,300 lb., with spares, it was ferried across the Atlantic to take part in races in the United States and Mexico.

Loading will be much easier when Seaboard get their swing-tail Canadair CL-44's next year.

### Push-button weather

To make life easier for the aircrew, B.O.A.C. have installed radio teleprinters on their Boeing 707 jet-liners. While in flight, the teleprinter "listens in" to weather data broadcast continuously from the ground. Whenever the pilot wants to know whether it is raining or shining at a point on his route, he simply presses a button and the machines types out the answer.

### Fastest from Europe to Far East

The first DC-8 jet-liner service directly over the North Pole was opened on October 11 by Scandinavian Airlines System (SAS), the company which flew the world's first commercial air services over the Arctic in 1954. It is the fastest route between Europe and the Far East, and cuts flying time on the 8,000-mile Copenhagen-Tokyo run to less than 16 hours, with just one stop at Anchorage, Alaska.

Close to 23,000 passengers and 3,000,000 lb. of cargo and mail have been carried on the SAS Polar route to Japan since it was opened in February 1957.

giant B-36 bomber with a working nuclear reactor in its rear fuselage. This reactor was not used for propulsion, but it helped to solve problems such as shielding the crew and instruments from radiation.

Last year the U.S.A.F. awarded Convair a contract to design a genuine atomic-powered aeroplane. After much study, it was decided to use a tail-first swept-wing layout, with the crew in the nose, as far as possible from the reactors in the tail. No decision has yet been taken on whether the prototype will have direct-air-cycle engines produced by General Electric or indirect-cycle engines by Pratt & Whitney. With either type, it will probably be necessary to

One of several versions of an atomic-powered aircraft being designed for the U.S. Air Force by Convair Division of General Dynamics Corporation, U.S.A.



SAS have developed special techniques for navigation in the Arctic. These include use of the Polar Path Gyro compass, which works free of the Earth's magnetic field, the Polar Grid chart, which eliminates navigating by meridians, and the Sky Compass, which literally "sees" the sun when it is down. Throughout most of each flight, the big DC-8 jet-liners are controlled by the Sperry SP-30 automatic flight system. Similar to the type used on supersonic missiles, it flies the aircraft with far greater precision than could a human pilot or any previous kind of autopilot.

### First atomic-powered aeroplane

The aeroplane shown in the artist's impression reproduced on this page could be one of the most important ever built, because it is typical of the designs produced by Convair for the world's first nuclear-powered aircraft.

Convair began studying the possibilities of atomic-engined aeroplanes nine years ago. Between 1954 and 1957 they flew a

have a pair of conventional turbojets under the wings, as shown, for use during take-off and landing. The reactors will then be switched on at high altitudes, where radioactive exhaust gases would cause no danger.

An aircraft of this type would use so little fuel that it could remain airborne for as long as its crew were able to remain awake and alert. It would, therefore, have immense value as an early-warning radar picket or carrier for Sky Bolt air-launched ballistic missiles.

### Stork migrates on metal wings

Back in September, in the little Dutch town of Best, a solitary stork sat on the church tower. He had, apparently, missed the annual stork migration to the sunny south; so the citizens of Best had pity on their feathered friend and took him to Schiphol Airport, Amsterdam, from where a K.L.M. airliner carried the stork to Kano in Nigeria.



# Peculiar Pi



The number known as Pi is perhaps the most fascinating number we know and use. Its connection with the circle is only one of the appearances made by this amazing number. Pi is the sixteenth letter of the Greek alphabet and we use the small letter,  $\pi$ . The number was discovered many years ago. We find references to it in the Bible. For example, 1 Kings 7:23 and 2 Chronicles 4:2, about 1,000 B.C. The reference here is to the building of Solomon's Temple. These early Hebrews took the value of  $\pi=3$ , as did the Babylonians.

Archimedes (287-212 B.C.) obtained an approximation for  $\pi$ . He showed that it is less than  $3\frac{1}{7}$  and greater than  $3\frac{10}{71}$ . This is a good approximation and is near enough for most purposes.

The value most familiar to the average schoolboy is  $\pi=3.1416$ . This was known at the time of Ptolemy in 150 A.D. In China, Tsu Chung Chih (fifth century), used a circle of large diameter and gave limits for  $\pi$  as 3.1415927 and 3.1415926. There were no closer approximations given by Chinese mathematicians until modern times. A Hindu, the elder Arayabhata (476 A.D.), gave the following rule: "Add 4 to 100, multiply by 8 and add 62,000." This result is the approximate circumfer-

ence of a circle when the diameter is 20,000. This gives  $\pi=3.1416$ .

New methods of calculating  $\pi$  were invented by Newton and Leibnitz, and Abraham Sharp (1717) calculated  $\pi$  to 72 places. In 1706, John Machin calculated its value to 100 places. Then followed Dase (1824-1861) with 200 places; Richter (nineteenth century) calculated the value to 500 places, and William Shanks (1853) to 707 places. The value of  $\pi$  to 15 places is as follows:  $\pi=3.14159, 26535, 89793 \dots$

Pi, however, appears in a more interesting form when we consider what is termed chance, or probability. This number may be seen in expressions giving the probability of a group of people being alive at the end of a certain period of time.

A most remarkable experiment was carried out by Count Buffon (eighteenth century), exhibiting the strange properties of  $\pi$ . A plain surface was ruled with parallel lines an equal distance apart. A needle of length equal to the spacing of the lines was dropped on to the surface repeatedly. The toss was considered favourable when the needle fell across the line and unfavourable when the needle rested between two lines. It was found that the probability of a success was  $2/\pi$ .

Lazzerini, an Italian mathematician, made elaborate experiments in 1901 and found that after making over 3,000 tosses the value of  $\pi$  was given as 3.1415929, an error of only 0.0000003.—STANLEY OLIVER (G.I.Mech.E.).

## CHRISTMAS CONUNDRUMS

### SOLUTIONS

**Nº1**

SIMON FILLED THE 5-PINT JUG, POURED 3 PINTS OF IT INTO THE OTHER, LEAVING 2 PINTS, AFTER WHICH HE EMPTIED THE 3-PINT JUG AND POURED THE 2 PINTS INTO IT. THEN HE FILLED THE 5-PINT JUG AND, FROM IT, FILLED THE 3-PINT JUG LEAVING 4 PINTS IN THE 5-PINT JUG.

**Nº2**

FIRST THE FARMER TOOK THE GOOSE ACROSS AND THEN WENT BACK TO FETCH THE CORN. HE THEN TOOK THE GOOSE BACK AGAIN, LEAVING HER. HE RECROSSED WITH THE FOX. FINALLY, HE WENT BACK AND FETCHED THE GOOSE.

**Nº3**

GOOD OLD PORT FOR ORTHODOX OXFORD DONS.

**Nº4**

MOVE BRAZILS 2 AND 3 TO THE EXTREME RIGHT OF THE ROW, REPLACING THEM WITH WALNUTS 5 AND 6 —

NOW MOVE WALNUT 6 AND BRAZIL 2 INTO THE GAP, REPLACING THEM WITH BRAZIL 1 AND WALNUT 5.

**Nº5**

15  
36  
47  
2  
—  
700

**Nº6**

**Nº7**



## DINKY TOYS NEWS

By THE TOYMAN



### BUCKET UNIT WITH A NOVEL TOUCH

I MUST first of all introduce the new models which have been added to the Dinky Toys range this month. I am quite sure you will agree with me that they are both intriguing. The first, two illustrations of which appear in these Notes, is one of the most novel road models to be made by Meccano Limited. It is the "Marrel Multi-Bucket Unit", a vehicle which is becoming increasingly well-known in this country and abroad for the specialised work it is able to carry out.

The Dinky Toys model of this most useful vehicle has a Leyland Super Comet chassis and is finished in pale yellow with silver head-lamps and radiator. The bucket, a most important part of the whole, is coloured grey.

The actual vehicle consists of a specially-constructed chassis frame and a huge bucket which occupies almost the whole length of the vehicle behind the cab. Hydraulic rams operate two arms supporting a cross-beam which lifts the bucket on and off the vehicle. In the Dinky Toys model, the rams are operated by hand. Apart from its unusual loading propensities, the vehicle can also be used as a tipping wagon.

In actual operation the bucket would be deposited on the ground to be filled with whatever material was to be lifted. The lorry would then be backed against the bucket, with the loading arms lowered and

Arif Tayabali of Westfield Estate, Warden Road, Bombay, who is a staunch member of the Dinky Toys Club.





A close-up picture of the new Marrel Multi-Bucket Unit.

nearly parallel to the ground. The cross-beam would catch against the hooks on the bucket which would then be swung inboard on to the chassis and the load could then be transported elsewhere.

For tipping, a lever on the side of the vehicle is turned, causing two cams to rise. When the loading arms are lifted the bucket begins to tip as the cams catch against two recesses in the base of the bucket. This enables the bucket to be tilted to an angle of 90 degrees, without its falling off the chassis or disengaging itself from the supporting bar.

The buckets for this model will be available separately as more than one bucket would probably be used in actual operation. Another feature of this fine lorry, which I am sure will appeal to many enthusiasts, is that it has six wheels, twin sets being fitted at the rear. The Marrel Multi-Bucket Unit is Dinky Supertoys No. 966 and should now be obtainable from your dealer.

This useful new model forms the centre-piece of the scene at the top of this month's Notes. You will see that the vehicle is about to pick up a bucket loaded with



gravel on a building site, ready to move it to another location. Notice how the pick-up arms are almost parallel with the ground as the vehicle backs up to the bucket.

The other Dinky Toys model to be released this month is illustrated below. As you can see, it is a Police Patrol Car (Dinky Toys No. 256) and I have no doubt it will be a very welcome addition to many collections this Christmas. The vehicle itself is the Humber Hawk converted for police use and finished in a smart, official-looking black, with red seats. Our model of this fine motor car has four-wheel suspension, windows, seats and steering wheel and carries a driver and passenger dressed in police uniform. There is an arresting (if I may use the word) triangular sign on the roof with the word "Police" lettered in white against a blue background, and a radio aerial—which is an essential part of a police car's equipment these days—is fitted close to the windscreen on the off-side. In all, this model is a well made and realistic miniature.

Meanwhile, the list of Dinky Toys accessories continues to grow. Latest additions are models of two petrol pump attendants, a man and a woman, for



The new Police Patrol Car has driver and passenger dressed in police uniform.



Thomas and Richard Dee, of Potters Bar.

use with the Petrol Pump Stations introduced last month. They are No. 007 on the Dinky Toys list.

Now that I have dealt with the new models, I would again draw your attention to the photograph on page 615. This shows the new Police Patrol Car waiting down a side road and checking the traffic on a main thoroughfare which is governed by a speed limit. You can well imagine that as soon as anybody broke the speed limit the Police Car would give chase, probably radioing its intentions to Headquarters as it sped along.

Two youngsters who have sufficient Dinky Toys models to build any number of layouts are Thomas and Richard Dee of Potters Bar, Middlesex, whose photograph appears on this page. You can see that they are very proud of their fine collection.

#### In T.A. Exhibition

Finally, I must tell you about a school-boy's dream of Dinky Toys and Supertoys model army vehicles which is helping to make history at the Bankfield Museum, Halifax.

About £12 worth of Dinky Toys are to form a permanent exhibit in the museum's Territorial Army section. They show a Medium Artillery unit as it would be

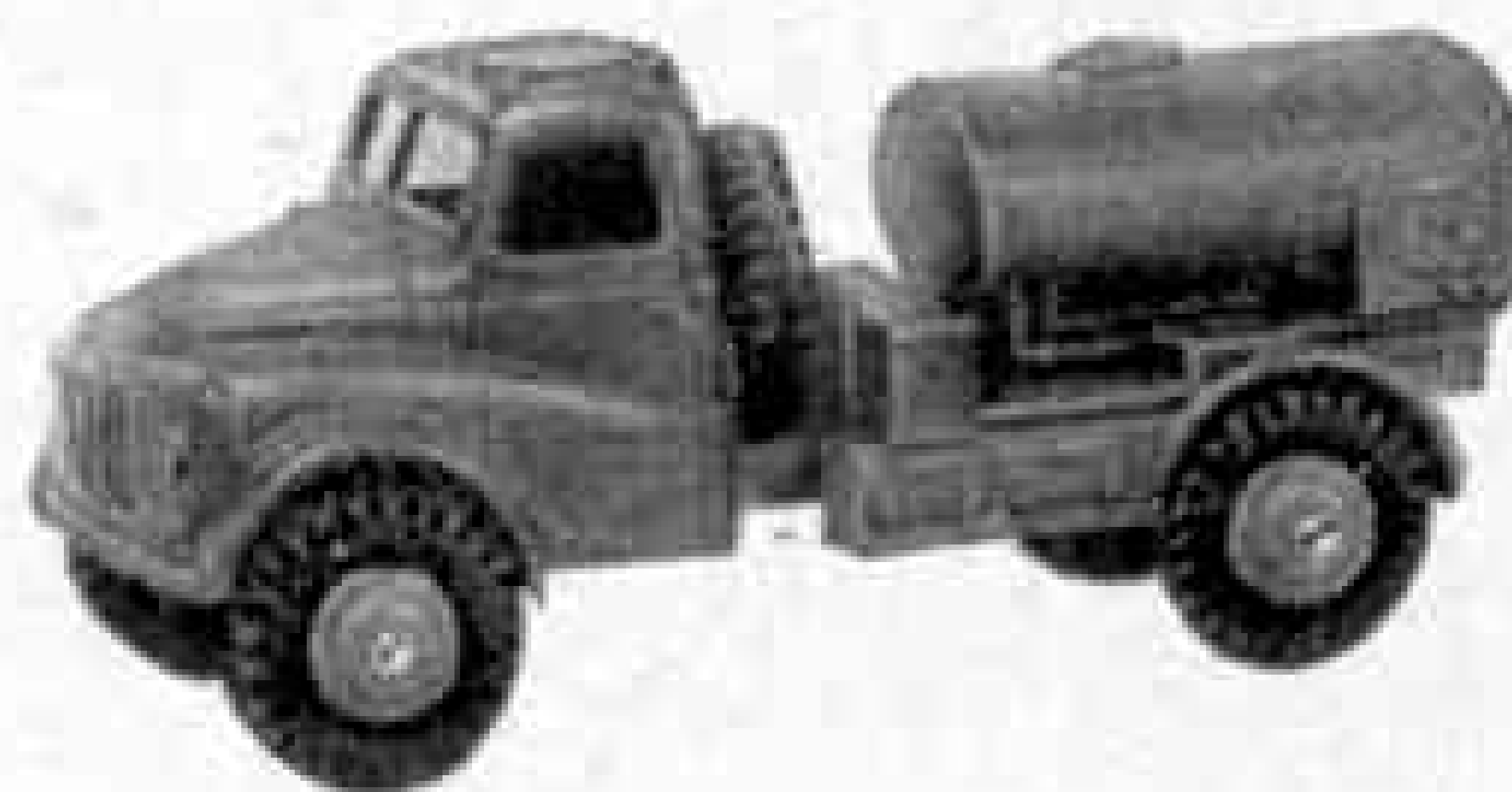
formed up ready for deployment on the parade ground, or the battlefield.

The models have been presented to the museum by a local Territorial Army unit, which, like some other T.A. regiments and units in the Regular Army, has used them in the training of personnel.

"They are wonderful models," said the Halifax Museums director Mr. R. A. Innes, as he unpacked a "Champ" observers' vehicle before the display opened. Vehicles in the display range from motor-cyclists to the ammunition wagons drawing replicas of six 5.5 guns.

### DINKY RHYMES

No. 643 Army Water Tanker



*Invaluable in desert fight,  
The Army Water Tanker  
Brings cold, fresh water to the site  
For Officer or Ranker.*



## Moving Bricks By Crane Grab

**I**N these days when so much building, in so many forms, is a feature of everyday life, a recently-developed system of handling bricks has proved to be of great value as a time-saving device. People do not always realise that building contractors are sometimes unable to run a building site to the greatest degree of its efficiency because of the limited working rate of cranes, which often have more to

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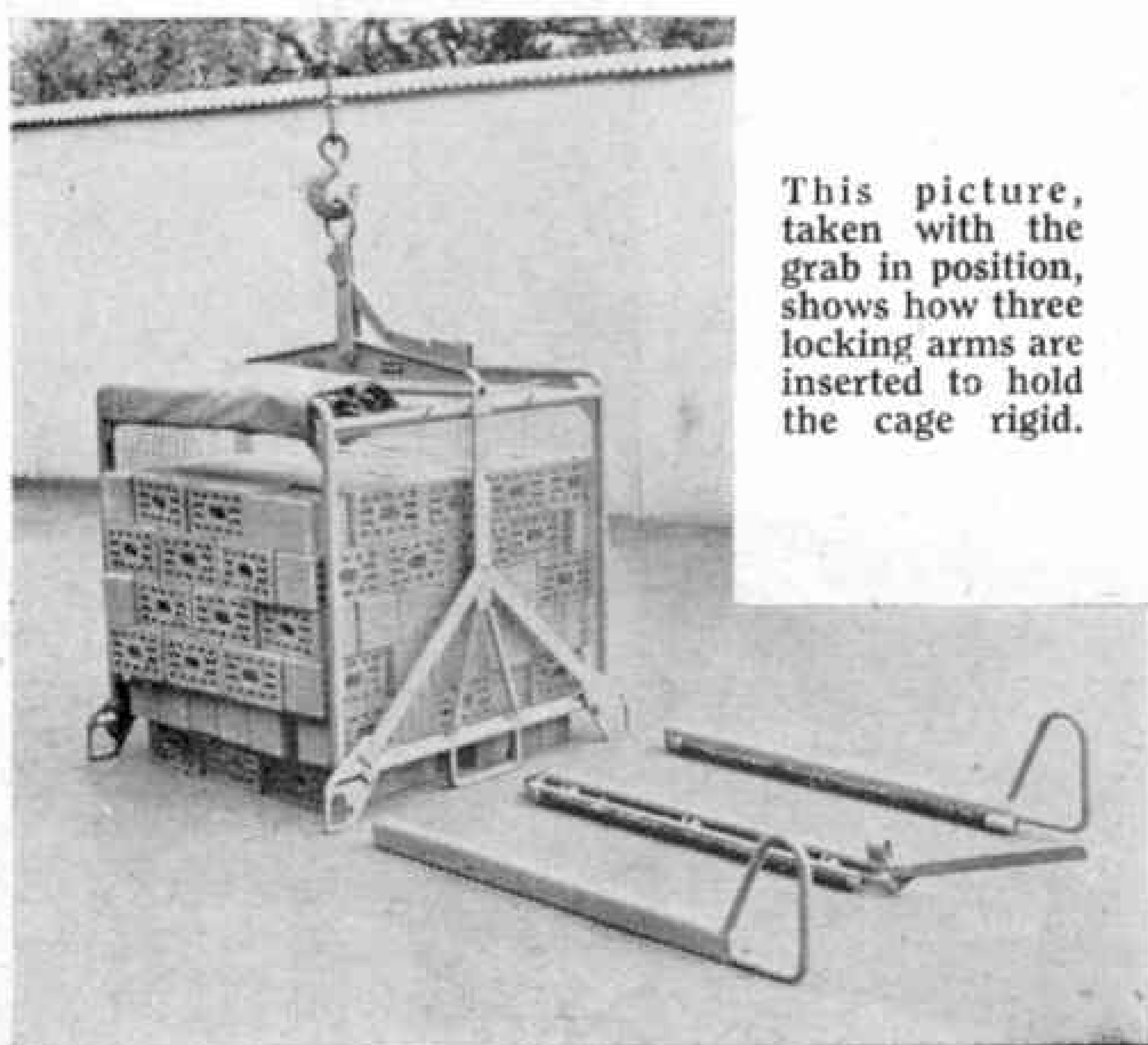
### BY THE EDITOR

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cope with than they are able to handle. Not only do the cranes have to handle bricks and other building materials, but they also have to move the empty packing material such as pallets and cases. These have to be loaded on to lorries for transport back to the works and sometimes, because of the pressure of time, brick pallets are not ready for return and a shortage of pallets at the works becomes unavoidable.

This is eliminated by the new method developed at a factory in Switzerland where, in conjunction with the brick industry, a crane grab system which allows the bricks to be transported unpacked has been developed. This new method meets the requirements of the Swiss Federal Institute for Insurance against accidents.

When the crane grab system is operated,



This picture, taken with the grab in position, shows how three locking arms are inserted to hold the cage rigid.



The crane grab about to close over a unit load of bricks. The photographs and the details on which this article is based are by courtesy of the Editor of Claycraft.

bricks are assembled, in cube form, at the plant and loaded by fork lift on to a lorry. At the site the crane grab directly unloads the bricks and transports them, still in cube form, to the place where they are required. Thus, uneconomical crane cycles brought about by transporting empty cases are avoided.

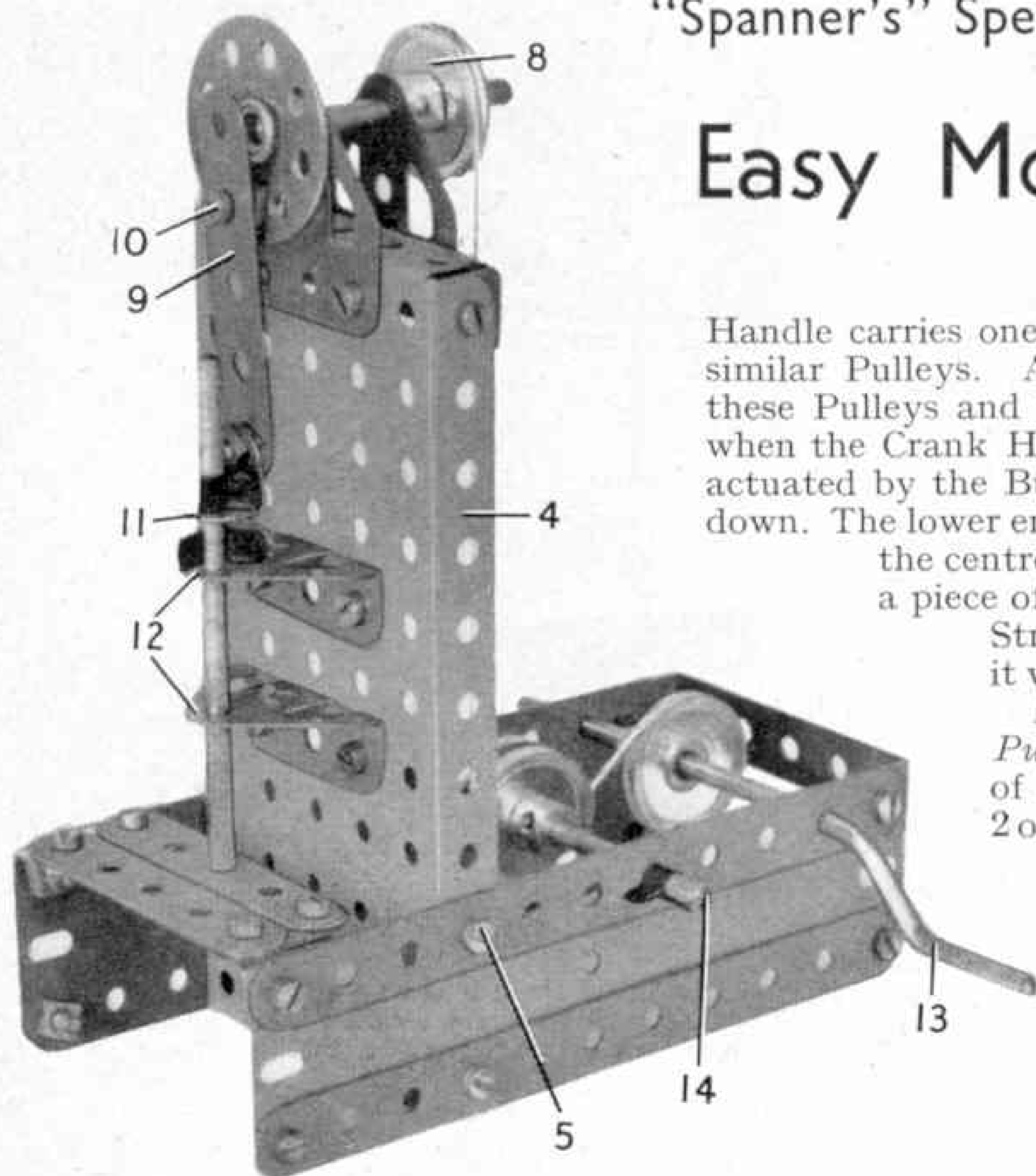
The grabs can, of course, also be used for transporting other materials and use of the machine becomes purely routine once the men on the site become accustomed to the system.

The crane grab is lowered over the load, and three locking bars are then inserted at the base to hold the cage rigid. Each grab has a security cover (seen folded over the front top bar in the illustration) which wraps round the two open sides to enclose the load completely, but this does not need to be used if the load is moved without being lifted more than 3 ft. from the ground. On other occasions, the use of this cover is imperative. A full cube load, incidentally, weighs at least 500 lb.

John Hart and Co. Ltd., of Southgate, London, N.14, are agents for the supply of the equipment in this country.

## "Spanner's" Special Section for Juniors

# Easy Model-Building



Handle carries one 1" Pulley and the Rod 14 two similar Pulleys. A belt of Cord is fitted around these Pulleys and the Pulley 8 as shown, so that when the Crank Handle is turned the  $3\frac{1}{2}$ " Rod is actuated by the Bush Wheel 7 and moves up and down. The lower end of the  $3\frac{1}{2}$ " Rod passes through the centre hole in one of the  $2\frac{1}{2}$ " Strips. If a piece of thin paper is placed on the  $2\frac{1}{2}$ " Strips and the Punch set in motion it will perforate a hole in the paper.

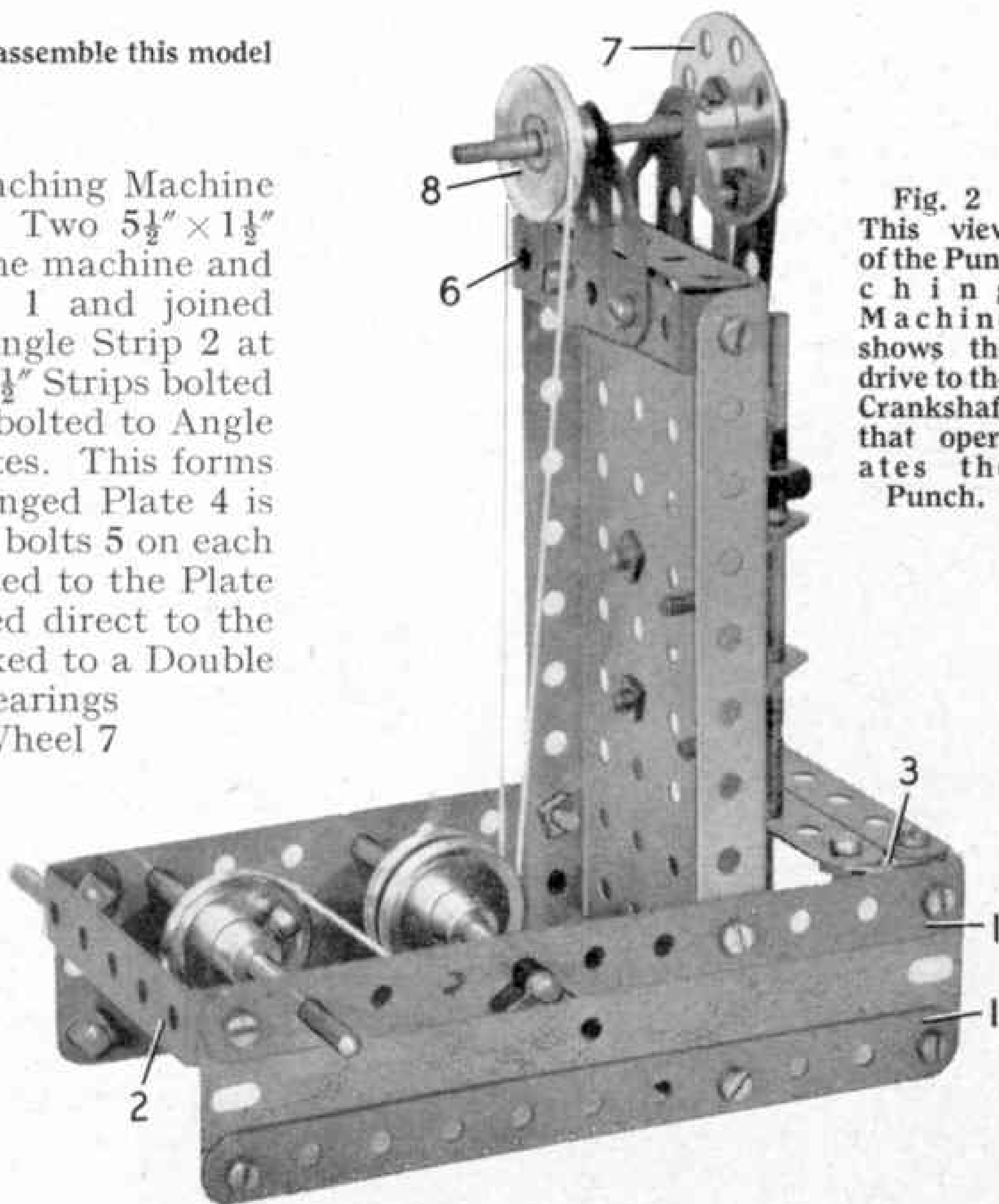
*Parts required to build the Punching Machine:-* 4 of No. 2; 3 of No. 5; 2 of No. 10; 5 of No. 12; 2 of No. 16; 1 of No. 17; 1 of No. 19s; 4 of No. 22; 1 of No. 24; 4 of No. 35; 30 of No. 37a; 24 of No. 37b; 1 of No. 40; 2 of No. 48a; 1 of No. 52; 4 of No. 111c; 2 of No. 126; 2 of No. 126a.

**Fig. 1**  
Outfit No. 1 contains all the parts needed to assemble this model Punching Machine.

### Punching Machine

This interesting model of a Punching Machine can be built with Outfit No. 1. Two  $5\frac{1}{2}$ "  $\times$   $1\frac{1}{2}$ " Flexible Plates form the sides of the machine and these are edged with  $5\frac{1}{2}$ " Strips 1 and joined together with a  $2\frac{1}{2}$ "  $\times$   $\frac{1}{2}$ " Double Angle Strip 2 at one end and, at the other, by two  $2\frac{1}{2}$ " Strips bolted to Fishplates 3, which are in turn bolted to Angle Brackets fixed to the Flexible Plates. This forms the base, and to it a  $5\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flanged Plate 4 is attached in an upright position by bolts 5 on each side. Two Flat Trunnions are bolted to the Plate as shown, one of them being bolted direct to the Flanged Plate while the other is fixed to a Double Angle Strip 6. These provide the bearings for a 2" Rod that carries a Bush Wheel 7 and 1" Pulley 8. A  $2\frac{1}{2}$ " Strip 9 is attached by a lock-nutted bolt 10 to the Bush Wheel 7 and this carries an Angle Bracket 11. A  $3\frac{1}{2}$ " Rod is held by Spring Clips in this Angle Bracket and passes through the two Trunnions 12.

A  $3\frac{1}{2}$ " Crank Handle 13 and a  $3\frac{1}{2}$ " Rod 14 are journaled in the base as shown. The Crank



**Fig. 2**  
This view of the Punching Machine shows the drive to the Crankshaft that operates the Punch.



### Tipping Truck

Owners of Outfit No. 3 will be able to construct the interesting Tipping Truck seen in Fig. 3. The chassis of the model is a  $5\frac{1}{2}'' \times 2\frac{1}{2}''$  Flanged Plate to which two  $4\frac{1}{2}''$  Strips made up of four  $2\frac{1}{2}''$  Strips, angled as shown, are bolted and joined together by two  $2\frac{1}{2}''$  Double Angle Strips 1 and 2. These are connected by a further  $2\frac{1}{2}''$  Strip 3 through the centre hole of which a  $3\frac{1}{2}''$  Rod is journalled near one end and kept in place by a 1" Pulley with Boss above the Strip and an eight-holed Bush Wheel 4, spaced by a  $\frac{1}{2}''$  Pulley without boss, below it. These parts should be assembled in such a way as to bring the Bush Wheel to the end of the Rod. Another 1" Pulley is placed at the top end of the Rod to form the steering wheel. The upper half of the steering column is encased by two  $2\frac{1}{2}'' \times 2\frac{1}{2}''$  and two  $2\frac{1}{2}'' \times 1\frac{1}{2}''$  Flexible Plates attached to the chassis by a Reversed Angle Bracket 5 on each side.

Two Trunnions 6, to which are bolted  $2\frac{1}{2}''$  Strips, are bolted to the Bush Wheel 4 and these form the bearings for the front wheel axle, which is a 2" Rod held in place by Spring Clips. The front wheel is a  $2\frac{1}{2}''$  Road Wheel.

Two Flat Trunnions form the bearings for the rear axle, which is a  $3\frac{1}{2}''$  Rod that carries two 1" Pulleys with Tyres.

The front of the tipping bucket is a  $2\frac{1}{2}'' \times 2\frac{1}{2}''$  Flexible Plate and each side is formed by a  $2\frac{1}{2}'' \times 2\frac{1}{2}''$  Flexible Plate and a  $2\frac{1}{2}'' \times 1\frac{1}{2}''$  Triangular Flexible Plate 7. They are attached to each other and to the floor by Angle Brackets at each corner, the floor being bent as shown to form also the back.

Two Double Brackets 8 are bolted to the floor of the bucket and these, together with two Fishplates held by bolts 9, form the bearings for a  $3\frac{1}{2}''$  Rod, which is held by Spring Clips. For travelling, the bucket is held by a lever formed from a  $2\frac{1}{2}''$  Strip 10 lock-nutted to the Flanged Plate. When the bucket is lowered to its normal travelling position the Strip 10 can be moved to engage with a Stepped Bent Strip 11 attached underneath the bucket.

A  $3\frac{1}{2}''$  Rod made up of a 2" and  $1\frac{1}{2}''$  Rod joined by a Rod Connector is journalled in two Fishplates 12 and is held in place by Spring Clips.

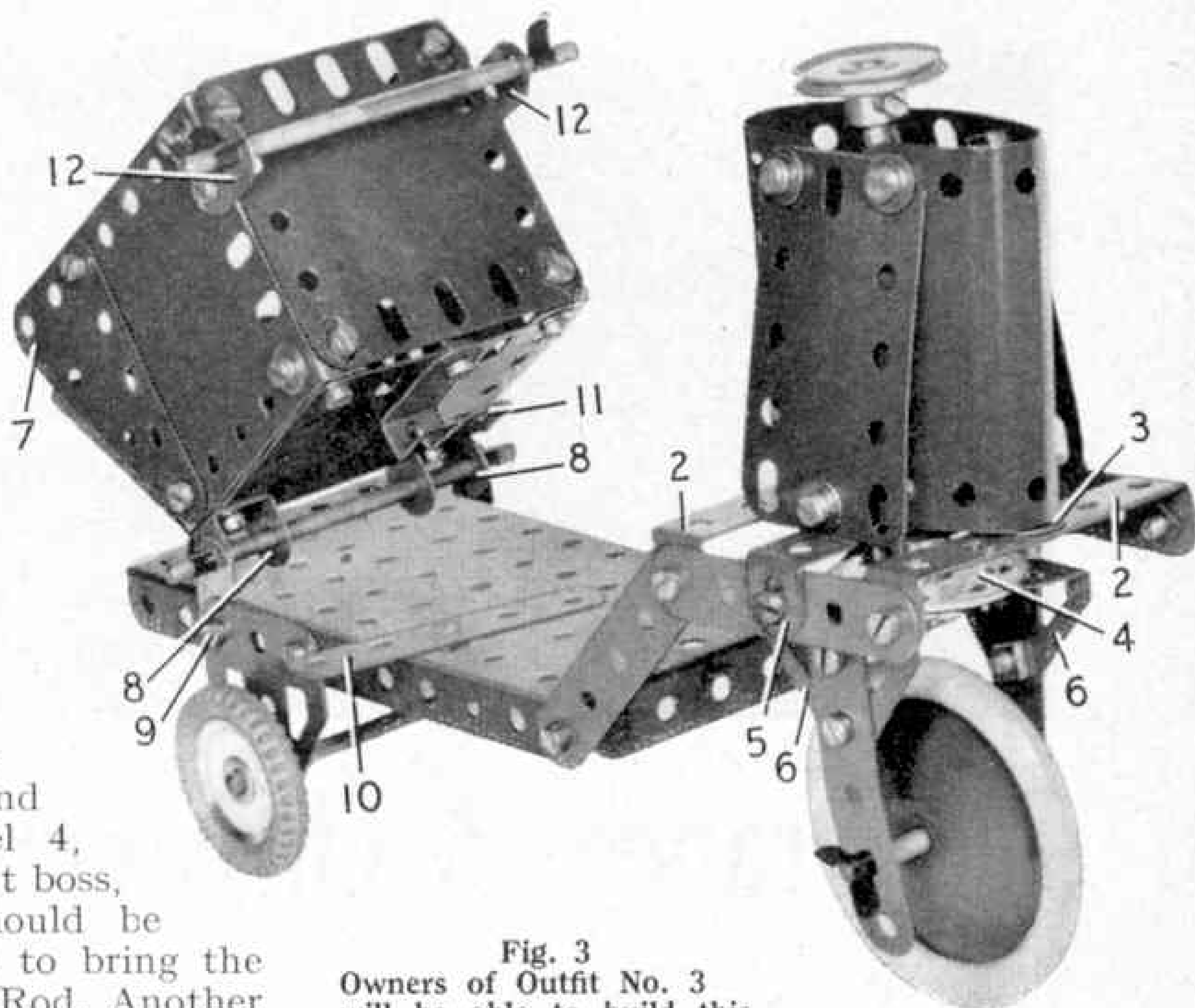


Fig. 3  
Owners of Outfit No. 3  
will be able to build this  
attractive Tipping Truck.

*Parts required to build the Tipping Truck:-*  
8 of No. 5; 4 of No. 10; 2 of No. 11; 8 of No. 12; 3 of No. 16; 1 of No. 17; 1 of No. 18a; 4 of No. 22; 1 of No. 23; 1 of No. 24; 6 of No. 35; 47 of No. 37a; 46 of No. 37b; 10 of No. 38; 1 of No. 44; 2 of No. 48a; 1 of No. 52; 2 of No. 126; 2 of No. 126a; 2 of No. 142c; 1 of No. 187; 2 of No. 188; 21 of No. 190; 1 of No. 192; 1 of No. 213; 2 of No. 221.

### Diesel Driven Motor Roller—(Continued from page 631)

$6\frac{1}{2}''$  Rod held by Collars in the centre holes of two six-hole Wheel Discs, each of which is fitted with two  $2\frac{1}{2}''$  Strips 26. The ends of the  $2\frac{1}{2}''$  Strips are connected by Angle Brackets to  $5\frac{1}{2}''$  Strips 27.

Four Formed Slotted Strips are bolted together as shown in Fig. 2 to form a half-circle, and this is lock-nutted at each end to the Strips 27. The join between the upper pair of Formed Slotted Strips is strengthened on the inside by a  $1\frac{1}{2}''$  Strip, and on the outside by a Double Bent Strip 28. A Collar is attached to the Double Bent Strip by two bolts, and in it is fixed a  $1\frac{1}{2}''$  Rod that is freely pivoted in a Crank 29 and a Flat Trunnion bolted to the Double Angle Strip 17. The Rod carries, above the Flat Trunnion, a  $\frac{1}{2}''$  Pinion 30 that meshes with a Worm on the steering column. The steering column consists of a 5" and a  $4\frac{1}{2}''$  Rod joined by a Coupling. It is mounted in a Double Bracket fixed to the Double Angle Strip 17 and in a Flat Trunnion bolted to the rear flange of the Plate 20.

Each side of the driving cab consists of a  $5\frac{1}{2}''$  Strip 31, two  $3\frac{1}{2}''$  Strips and a built-up strip 32 made from a  $2\frac{1}{2}''$  Strip and a  $2\frac{1}{2}'' \times \frac{1}{2}''$  Double Angle Strip. The Strip 31 is connected at each end to the body by a  $\frac{1}{2}''$  Reversed Angle Bracket, and the roof, made from two  $3\frac{1}{2}'' \times 2\frac{1}{2}''$  Flanged Plates, is attached to the upper ends of the  $3\frac{1}{2}''$  Strips and the strips 32. The Flanged Plates are joined together at the centre of the roof by a  $1\frac{1}{2}''$  Strip.

The back of the cab consists of two  $2\frac{1}{2}'' \times 2\frac{1}{2}''$  Flexible Plates overlapped three holes. It is secured to two  $2\frac{1}{2}'' \times \frac{1}{2}''$  Double Angle Strips bolted to the roof and to two  $1'' \times 1''$  Angle Brackets fixed to the sides of the cab.



# The Orange: A Christmas Favourite

## *Science Plays A Part on the Plantation*

**M**OST of us regard oranges and Christmas as inseparable, and with the approach of the Festive Season much larger quantities than usual will very soon be reaching the shops. Not so very long ago, sales of oranges were confined mainly to Yuletide, and although they are now available throughout the year, more are sold in November and December than at any other time.

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By Arthur Turner

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The orange has become a popular all-the-year-round fruit as a result of its introduction into widely-scattered parts of the world, so that large numbers are always ripening somewhere, so that the market is catered for almost continuously. Improved facilities for refrigeration have also helped, enabling the fruit to be transported over long distances without deteriorating.

The West Indies produce a pale but juicy and finely-flavoured variety of orange which is on sale in Britain during the last three months of the year. From Christmas onward, Spain and California meet a large part of the demand, while other countries with valuable orange groves include South Africa, Australia, Italy, South America, Palestine and France.

Today, in fact, growing and selling oranges is really big business, the annual

world crop totalling nearly 200 million cases—and a single case may contain more than 400 oranges!

Yet, oddly enough, little that is definite is known about the origin of this delectable fruit. Scholars are still speculating about the first country to grow it specially, although it is generally thought that the Chinese were the first to do so. They had certainly perfected orange cultivation 2,000 years ago, for we know that at that time the "apple of gold" (as it was called long ago) was being exported from China to India and Japan.

The ancient Chinese not only prized the orange as a dessert; they used it in the production of confections, flavourings, and even incense. They made medicines from the dried peel, and prepared perfumes from the blossom. The orange squashes we drink today are far from being a modern idea; the Chinese were drinking them thousands of years ago.

### **In the New World**

The fame of the orange spread to Europe by way of India, Egypt, and Palestine, reaching the Mediterranean countries in early Christian times. Italian gardeners are said to have been the first in

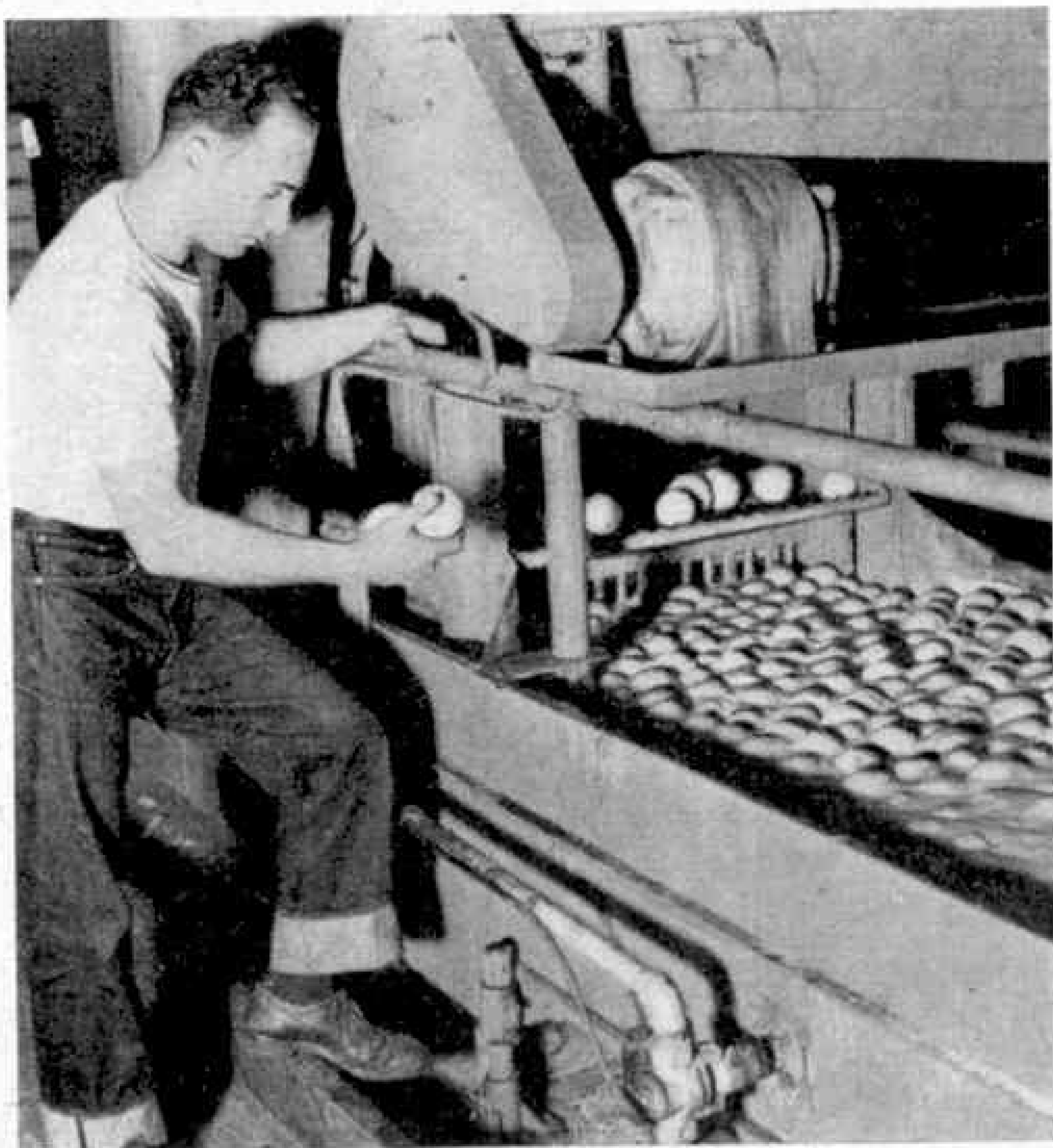
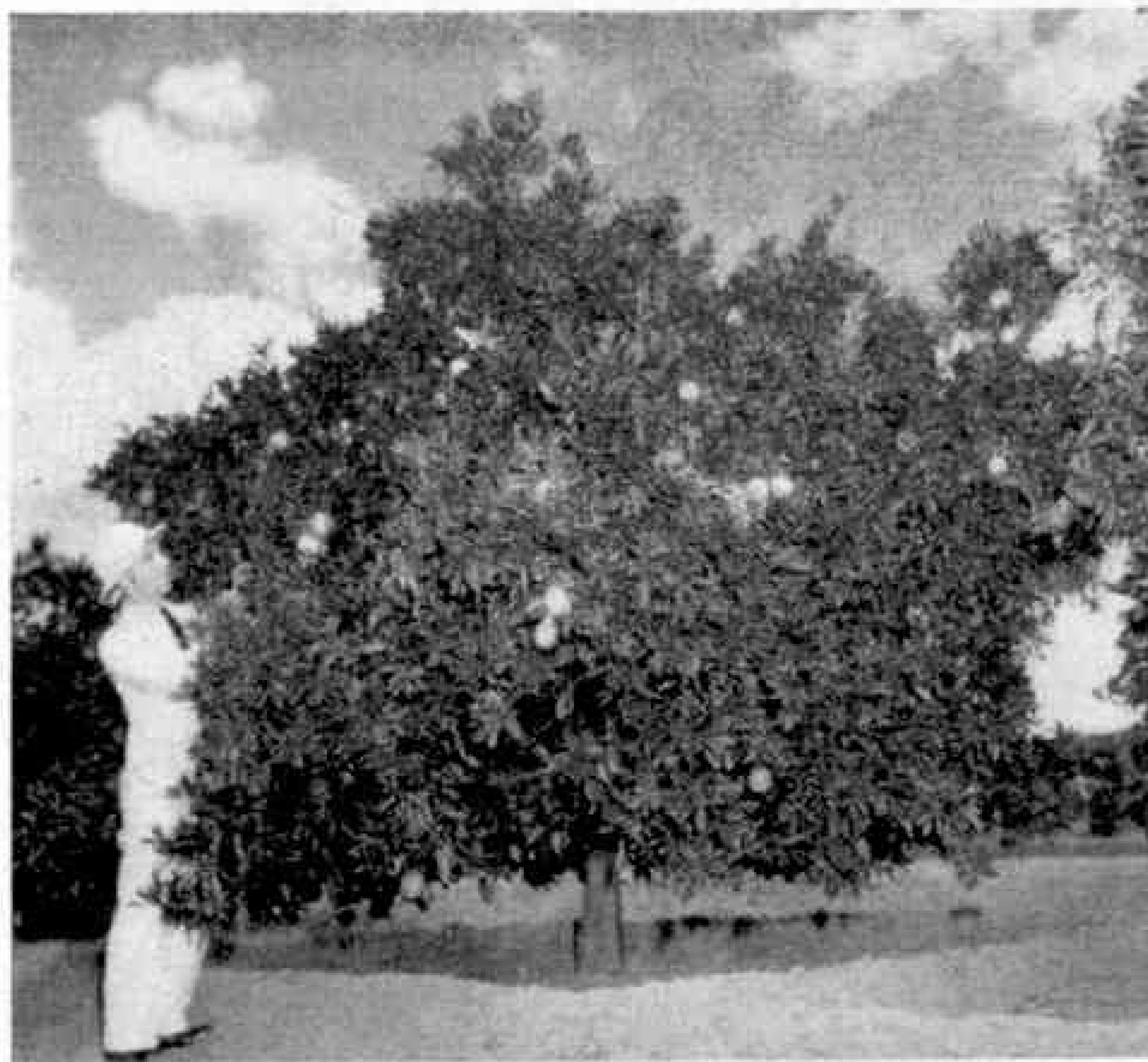
Our picture at the top of the page shows citrus farms in the Rustenburg area of South Africa. A farmer's house stands in the foreground.



Europe to take up orange growing, but it was the Spanish explorers of the fifteenth century who carried the fruit across the Atlantic and established it in the New World.

Columbus took some orange pips with him when he made his second voyage in 1493, and he planted them successfully in Haiti. Florida had orange trees in the sixteenth century, but the commercialisation

Examining a young orange tree at the sub-tropical horticulture research station at Nelspruit, East Transvaal. The picture at the foot of the page shows oranges being washed in a mild solution of soap and borax—one of the initial steps in packing higher grade fruit.



of the fruit in California did not start until about 1800.

Orangeries were once fairly common in Britain, but the fruit had to be grown under glass. Charles I had a vast orangery at Wimbledon, although in his day oranges were esteemed here more for the oils in the peel than for their food value. Bottled orange water served as perfume, and dandies carried a ripe orange in their pockets for the same purpose.

Charles II tried to popularise this fruit, and at the same time make a courtly gesture to Nell Gwynn, by banning the sale of other fruits in theatres. The regulation actually remained in force for more than a century, but failed to promote the building of more orangeries, the English climate not being really suited to a fruit ordinarily demanding warmth and sunshine.

The South African orange trade may be said to have been founded by the Boer traders and missionaries who trekked into the Transvaal and planted orange pips there. Some of the resulting trees still bear fruit, although the oranges we receive from South Africa today are the outcome of intensive husbandry during only the last 60 years or so.

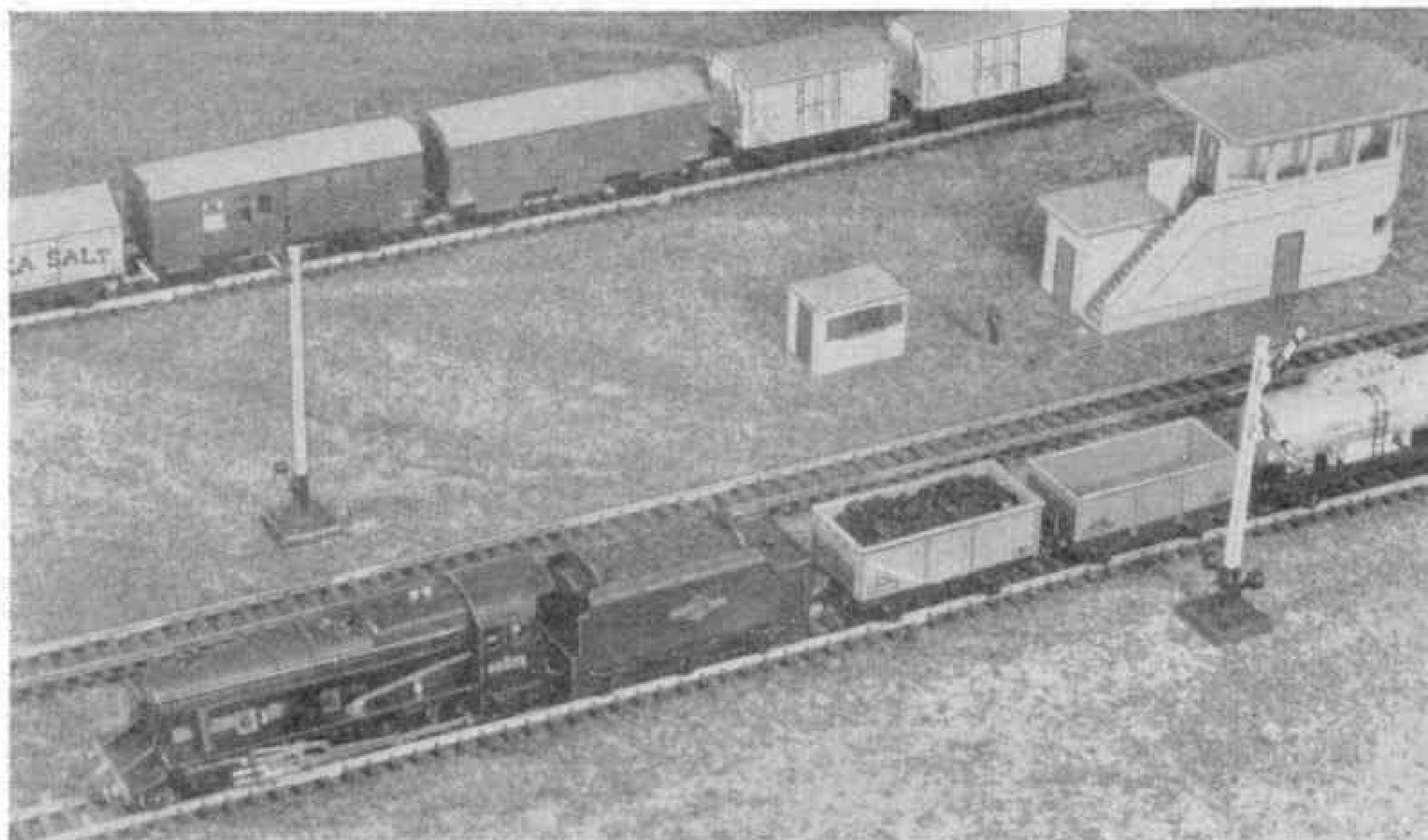
Orange growers in various parts of the world, in fact, have applied science to their job in the last three or four decades, while improved methods of handling have also widened the market.

To avoid bruising the fruit, the picker puts it into a special bag as he removes it from the tree. The bag has an opening at the bottom to release the fruit into smooth-lined boxes, the oranges being conveyed in this way to the packhouse for careful grading, according to the amount of juice, sugar, and acid they contain.

They are also graded into different sizes, twelve sizes usually being recognised. The pickers, graders, and packers wear gloves to protect the fruit, and all machinery used in the packhouses is checked and disinfected daily as a precaution against the delicate tissues of the fruit being damaged.

High-grade oranges may be washed in a mild solution of soap and borax before being packed, and the consignments are kept in cooling houses before being transferred to refrigerated cargo ships for despatch to distant markets. A peculiarity of the orange is that it does

(Continued on page 639)



## HORNBY RAILWAY COMPANY

By the Secretary

# *The New Diesels In Hornby-Dublo*

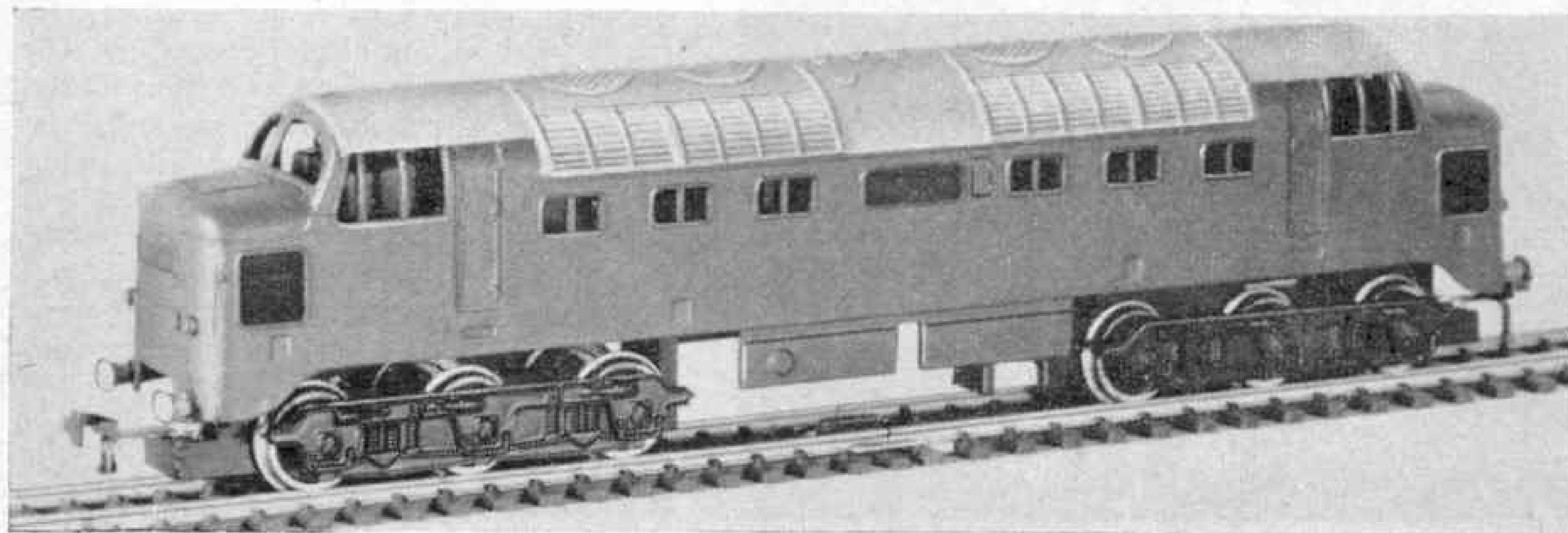
THIS month there are various items of news for you, and the pictures on this and the opposite page practically tell their own story. You have already heard about the Ring Field Motor now being used in several new Hornby-Dublo Locomotives and last month I gave details of a remarkable test performance by an engine fitted with one of these motors. None of you will need to carry out such a searching test on your own layouts, but the results obtained under specially-observed conditions give you an idea of the performance you can expect from Locomotives fitted with this motor.

The two Locomotives most recently introduced in Hornby-Dublo represent

diesel prototypes and you can see what they look like from the pictures here.

The photograph at the foot of this page shows one of the two new models. It is the double bogie or Co-Co Diesel-Electric Locomotive, an imposing affair for heavy main line services, based on a 3,300 h.p. design by the English Electric Company, Ltd. In the model one of the two well-detailed, six-wheeled bogies carries the Ring Field Motor, the capabilities of which

(Above) A Hornby-Dublo Two-Rail 2-8-0 with Ring Field Motor works a mixed freight train. In the background the Hornby-Dublo Horse Box and Passenger Fruit Van are prominent. (Below) This view of one of the first Hornby-Dublo Co-Co Diesel-Electric Locomotives to be completed shows its bold and attractive appearance.







The compact, fully-detailed design of the Hornby-Dublo 0-6-0 Diesel Shunting Locomotive is well brought out in this illustration.

housing or body, which exactly reproduces the external character of the prototype. A point you will have noticed straight away is that the outside frames and cranks which form a well-known feature of this type of locomotive are

modelled in very pleasing form. Except for these cranks, and the coupling rods that connect them, the engine as a whole has the "shut-in" appearance that is a feature of this type of diesel.

#### A handy locomotive

At the head of this page is the 0-6-0 Diesel-Electric Shunting Locomotive and there can be few layouts on which this handy little engine will not find a place. Its general design is based on that of the B.R. Standard diesel-electric shunting locomotives found in large numbers in yard service here, there and everywhere. In such operations in miniature the Ring Field Motor which is fitted to the Hornby-Dublo model has special advantages that enable the Hornby-Dublo operator to reproduce exactly the running characteristic of the real thing.

This handy little engine has a moulded

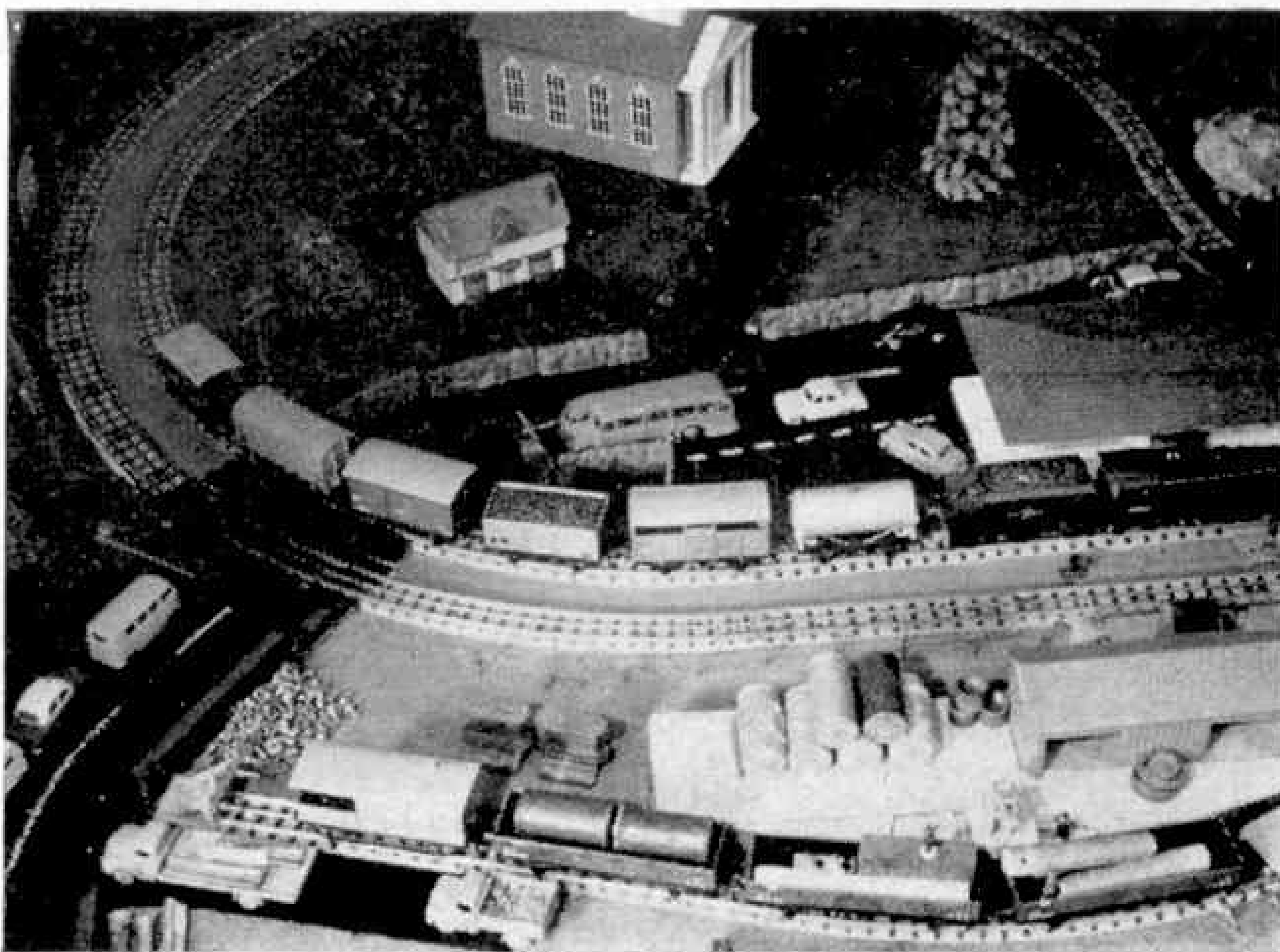
As many of you already know, the Ring Field Motor is incorporated in the Two-Rail *Cardiff Castle* and 8F 2-8-0 Locomotives and one of the latter is seen in the picture at the head of this talk. When running trains of the type on which a 2-8-0 would normally be used the special advantages of the Ring Field Motor are very clearly demonstrated. I had the pleasure of "driving" one of these engines just recently and, using a suitable power unit, found it was possible to move the engine from rest in such a way that the vehicles composing its train began to move one after the other as the slack between the couplings was taken up. This is a fascinating business, exactly comparable to what happens when a real loose-coupled goods train is set in motion.

It should be noted that the Ring Field Motor cannot be fitted to existing *Castle* or 2-8-0 Locomotives which have the older type of motor. The housings of the later models have been modified to take the Ring Field Motor.

A group of some of the new Hornby-Dublo Railway Staff. Reading from left to right the figures are: Stationmaster, Goods Guard, Porter, Ganger, Carriage Examiner and Policeman. More about these later!



A corner of the "Lundistan Government Railways" operated by "M.M." reader Peter Lundy (H.R.C. No. 314545) and his friends. This view shows the layout at a late period of its Three-Rail development. The yard in the foreground contains evidence of much traffic loaded in several Wagons.



## A "State" System And Other Lines

YOU will perhaps remember that in the *M.M.* of just twelve months ago, December 1959, I told you something about the Hornby-Dublo layout operated by a keen enthusiast, S. G. P. Lundy, of Belfast, with his brother and a group of friends. The system is known to them as the *Lundistan Government Railways*. This and other associated activities form part of the organisation of an imaginary state, in which each member of the group has a particular responsibility. This arrangement leaves the management of the line to develop any

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BY "LAYOUT MAN"

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particular schemes of traffic working that appeal to them and in this direction, as well as in its operation, they have achieved considerable success.

The illustration above, and the following notes, are taken from a progress report that the *Lundistan Railways* authorities sent in a little while ago. The most recent development has been the substitution of Two-Rail track for the original Three-Rail, so that the state of affairs now shown in the photograph shows its final form as a Three-Rail system. The actual rail layout now in use differs somewhat from the original, probably as the result of operating

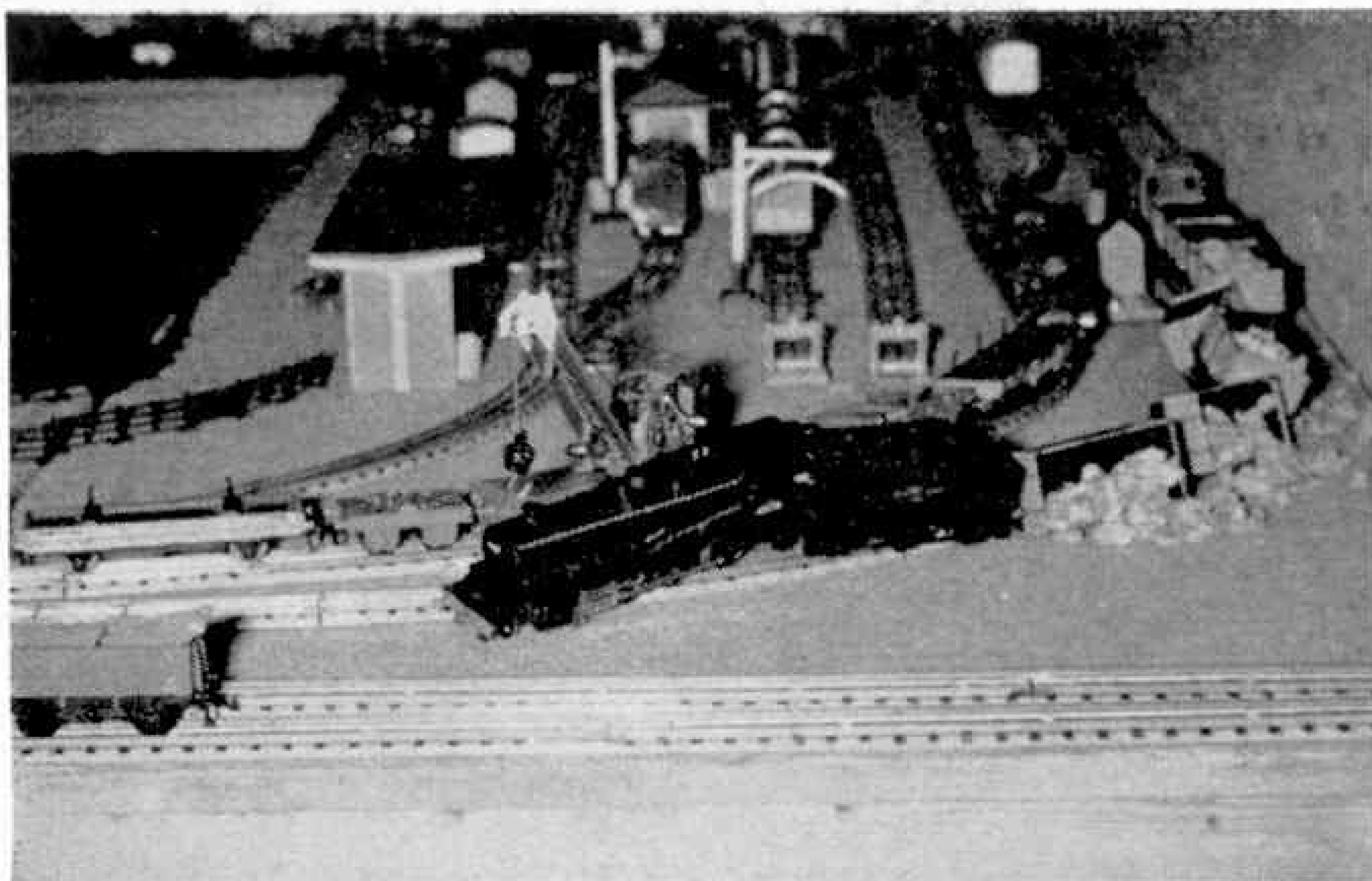
experience. In addition to the tracks at normal baseboard level, a high-level section is planned and no doubt our friends will tell us more about this when it has taken shape.

It is clear that Hornby-Dublo Locomotives and Rolling Stock are very carefully maintained on this line, with the result that during a whole year's working there was only one instance of an engine failure necessitating complete overhaul. Additional evidence of the high state of efficiency of the Locomotive stock is found in the results of a series of timed tests that were made, with highly satisfactory results.

Although actual mishaps are few and far between a Hornby-Dublo Breakdown Crane has been added to the equipment. This effective addition has been greatly admired by all those who have seen the railway. And there have been many such people, for the layout has been on show on various occasions for charitable purposes, with good results.

It is evident from the illustration at the head of this page that a good deal of attention is given to road services, for which Dublo and other Dinky Toys vehicles are employed. This adds considerably to the realism of the train operations and the varied loads seen in the picture suggest that the line is kept busy. Incidentally, you can see what appears to be something like a





The Hornby-Dublo Breakdown Crane has a job to do on the layout of E. Desmond-Spencer, M.A., where a freight train including a 2-8-0 locomotive seems to have suffered a mishap.

pile of scrap in the yard, just above the Buffer Stops in the left-hand corner of the picture. This intriguing heap is really a good handful of Meccano Nuts and Bolts! The drum-like objects on the loading platforms and in one of the Tube Wagons, are, I suspect, containers that originally held shaving soap! There is no end to the possibilities of using odds and ends like this on a miniature railway.

### A Job For The Crane

Reference to the Hornby-Dublo Breakdown Crane brings us to our next picture, where this fine piece of equipment is shown actually on the job, but on another layout. This is the railway run by Mr. E. Desmond-Spencer, M.A., of East Retford, and his son, and I am sure that together they have some really good times with this layout.

The photograph shows that an extensive, well-planned system of tracks is available, and considerable attention has clearly been given to the construction of the baseboard itself. Even so, mishaps can occur

is that developed by our reader D. Willis, of Hounslow, whom you see below. The layout incorporates double track and there is a running loop that makes a useful alternative route for trains travelling normally on the inner main line. There are, therefore, three tracks through the station, and in the lower picture here a *Silver King* 4-6-2 Locomotive is just bringing a train from the loop line on to the inner main track.

### Trains With Titles

A very complete programme of train services is operated and a favourite engine for the express trains is the *Bristol Castle*, also shown in the illustration. Special attention is given to the correct naming of the various expresses, and in addition to the standard Headboard Labels our friend has made some himself.

D. Willis (H.R.C. No. 321076) with his Hornby-Dublo layout. In the centre of the system is an impressive bus garage.





A Hornby No. 40 Tank Locomotive and various items of No. 50 rolling stock appear in this picture. The roof of the Saxa Salt Wagon has a door, which is shown open

## START ON THE RIGHT LINES

Advises "Tommy Dodd"

THIS talk is mainly for the benefit of those who are hoping to start a Hornby Railway before long. I hope that my more experienced friends will not immediately turn over the page on reading this, but will remember the time when they themselves were just about to start a Hornby Gauge 0 railway. They may still learn something!

There is no need for me to detail the range of Hornby Clockwork Trains and separate items of rolling stock because this is done very neatly in the current Hornby Clockwork Trains folder. But there are certain things it is helpful to know whether one is beginning a railway, or planning additions to one already in existence. All Hornby Train Sets include sufficient rails to make a simple oval track.

Curved Rails are necessarily included and it is not always realised what effect the radius of these curves has on the amount of space that will be required for the layout. In each of the smaller Train Sets in the Hornby range, Nos. 20/21 and 30/31 respectively, six 1 ft. radius curves are included and a space of 3 ft. 3 ins. by 2 ft. 6 ins. is required to accommodate the oval of the track formed by combining these curves with the Straight Rails also included. In the other Sets, Nos. 41/45 and 51/55, there is a greater number of curved rails, because these are of larger radius, 2 ft., and

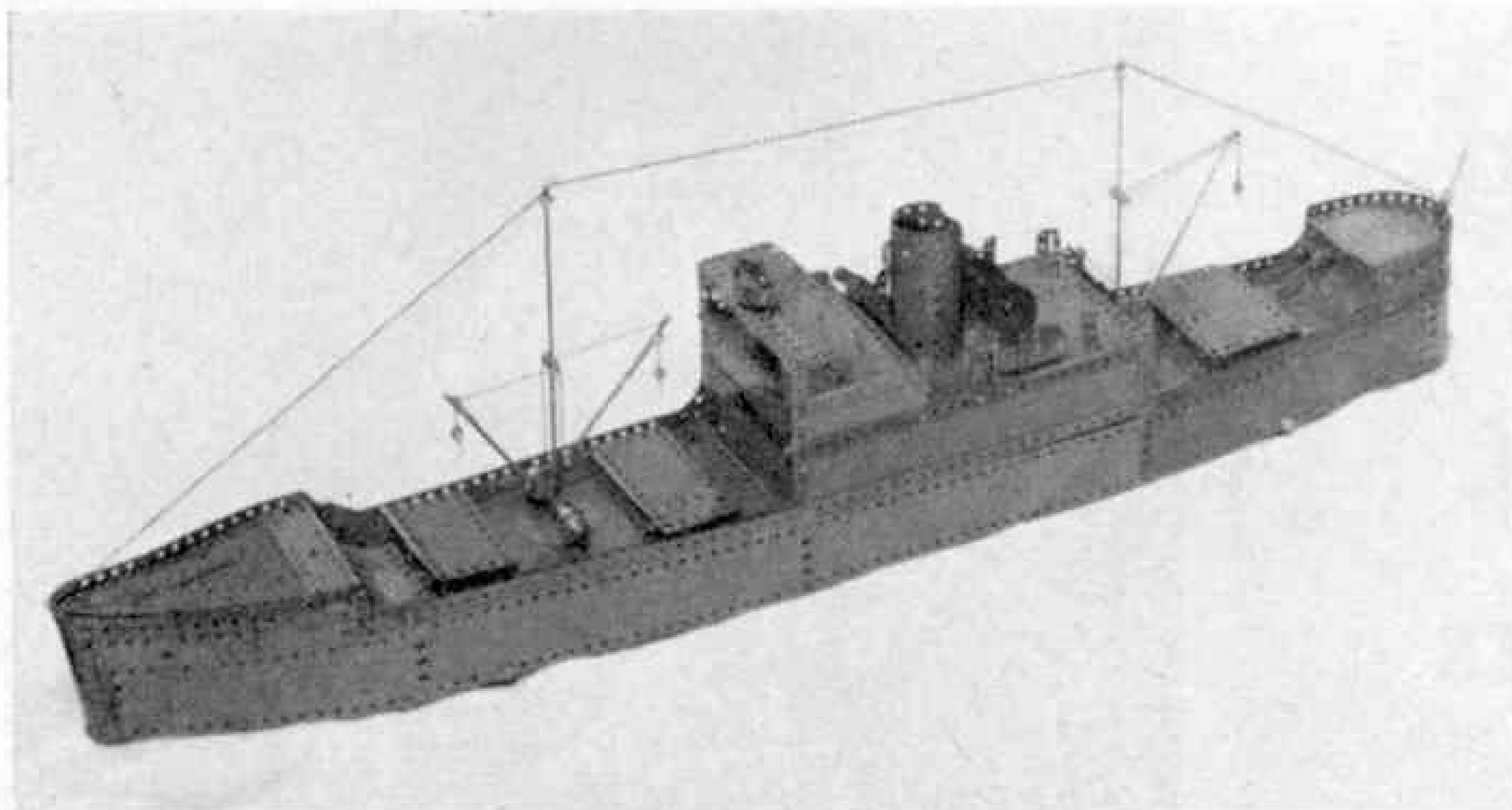
it takes twelve of them to form a circle. The space required for the 2 ft. radius Rails contained in these Train Sets is 5 ft. 4 ins. by 4 ft. 6 ins.

When additions are being made to the simple oval tracks we have so far considered, it is easy enough to work out what space will be needed as the lengths of the various Straight Rails appear in the folder referred to. So far so good. When additions to the railway involve further Curved Rails or even Points and Crossings, it is essential that these should be of the same radius as that of the Curved Rails already in use.

Apart from curves it is necessary to distinguish between the trains of the 20 and 30 series and those of the bigger sets because the coupling systems employed are different. Those used on the engines and rolling stock of the Nos. 20/21 sets are of the simplest possible kind. Those employed on the Nos. 30/31 stock are different in design, but it is possible to use the two types together.

Automatic couplings distinguish the rolling stock of the 2 ft. radius sets and the Nos. 40/41 and 50/51 vehicles obtainable separately. These cannot be coupled to the Nos. 20/21 and 30/31 stock, nor can the locomotives and vehicles of the 2 ft. radius sets be run successfully on 1 ft. radius track.

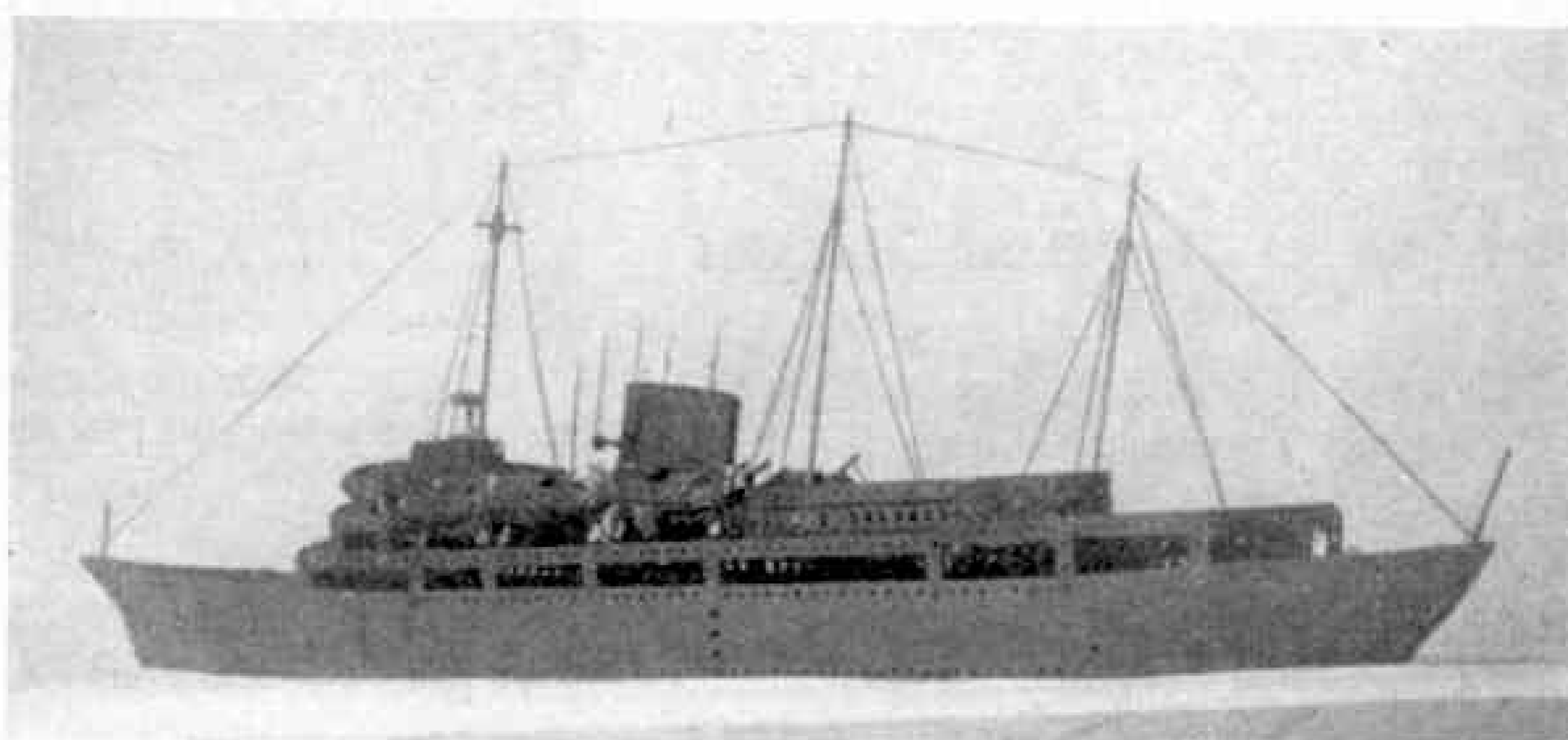




On the left is a fine model, neat and well proportioned, of a cargo ship. It was built by Drummond Corvie, Tunbridge Wells, Kent. Most readers will recognise the model of the Royal Yacht "Britannia" seen below. It won a prize for Bobby Hill, Scarborough, Ontario, in a recent "M.M." Competition.

## Autumn Competition

### A Final Reminder



DECEMBER is always an outstanding and busy month, especially for young people who so greatly look forward to Christmas with all its joys and excitement. For most of us the days are so full of such activities as buying and selecting presents, writing and posting Christmas Cards, hanging holly, and all the other incidentals of the Festive Season that the time is apt to pass all too quickly. In view of this, we want to remind model-builders who intend to send in entries for the Autumn Model-Building Competition that the Competition closes on December 31, so that their entries must be completed and posted as soon as possible. As this Contest is open for Meccano models of all kinds, there is no age limit. We are looking forward to a record entry, and we would not like to think

that any intending competitor had missed his chance of winning one of the cash prizes offered because his entry arrived here too late to be considered.

As we have mentioned, the Competition is open to readers of all ages living in any part of the world. In order to give everyone a fair chance, irrespective of his age, entries will be grouped into two Sections, A and B. Section A will be for competitors under 14 years of age on December 31 next, while in Section B will be placed all entries from competitors aged 14 or over on that date. In each of these Sections a separate set of Cash Prizes and Certificates will be awarded, and details of these are given in the panel at the foot of this page.

For the benefit of those who have not entered a Meccano Competition previously, we wish to say that the conditions are simple. After you have built your model, either obtain a photograph of it, or, if this is not possible, make a good sketch of it. On the back of your picture or sketch, state what age you will be on December 31. Then send your entry, together with a few written details of the model, to *Autumn Model-Building Competition, Meccano Ltd., Binns Road, Liverpool 13*. The actual model must not be sent.

#### THE PRIZES

The following prizes will be awarded in each of the Sections A and B.

First Prize — Cheque for £4 4s. 0d.

Second Prize — Cheque for £2 2s. 0d.

Third Prize — Cheque for £1 1s. 0d.

Five Prizes each of 10/6d.

Five Prizes each of 5/-d.

Certificates of Merit also will be awarded.

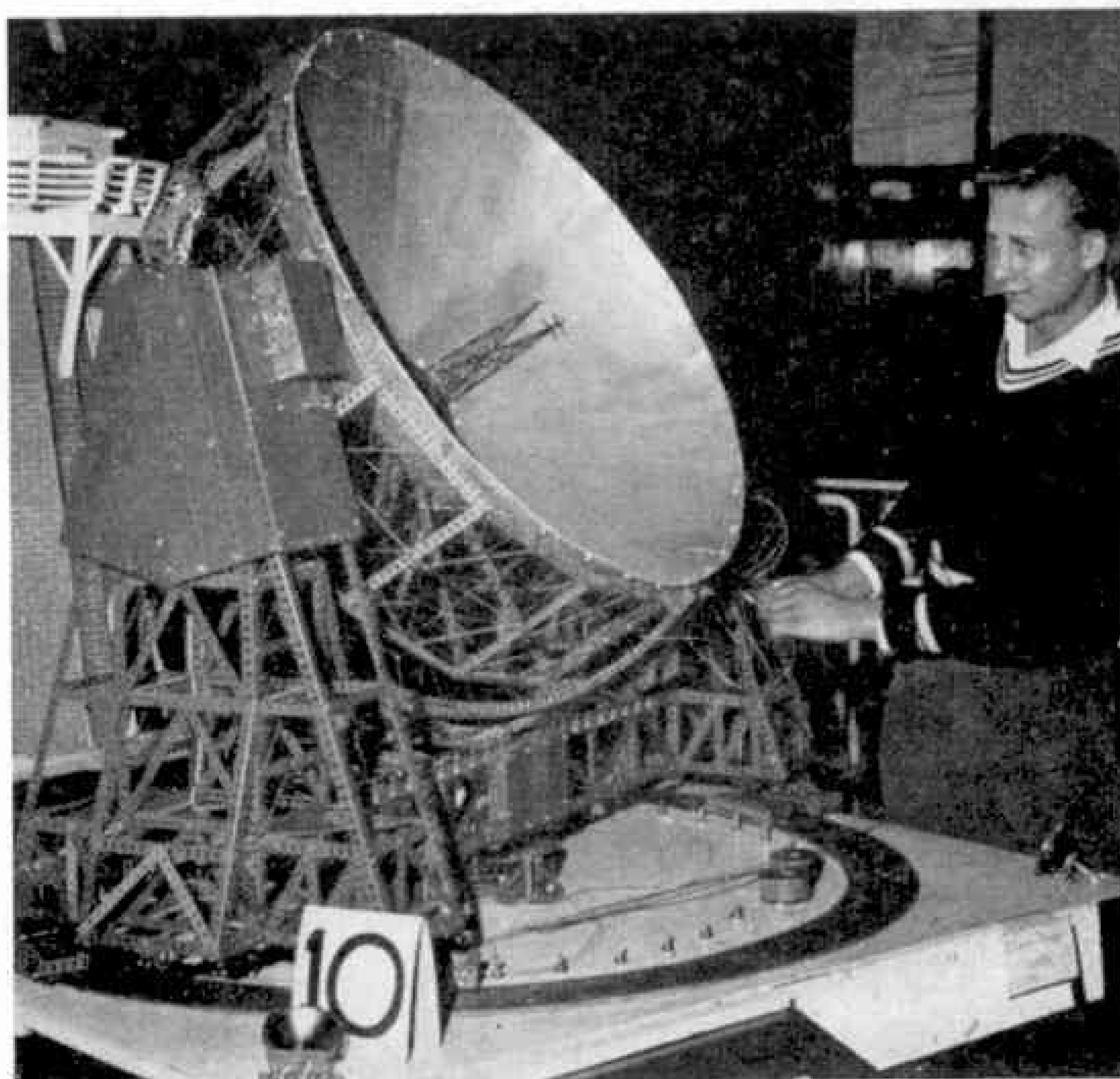
Closing Date: December 31, 1960

# Among the Model- Builders

By "Spanner"

## Meccano at the Rand Hobbies Fair

Britain's great radio-telescope at Jodrell Bank has tempted many model-builders to test their skill in modelling it in Meccano, and indeed I have heard of some very attractive and realistic models that have resulted. Now I have received news of another example built by a Meccanoite in South Africa, which succeeded in winning the First Prize at the Rand Hobbies Fair this year. It was built by Manfred Gutenberg, of Discovery, Transvaal, who is seen in the illustration on this page demonstrating his model. In addition to the

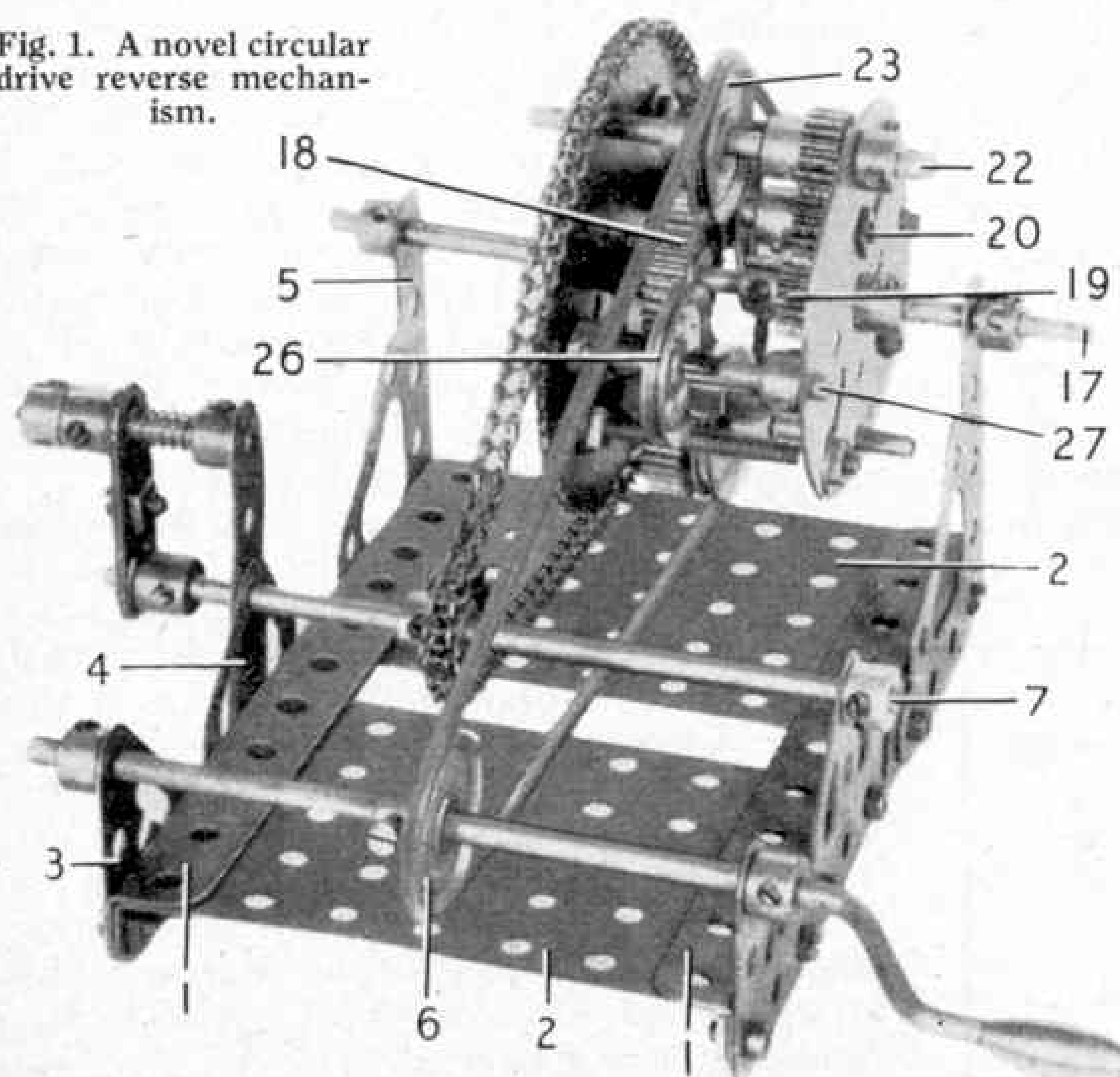


Manfred Gutenberg, Discovery, Transvaal, demonstrating his fine model of the Jodrell Bank Radio-telescope, at the Rand Hobbies Fair.

First Prize, Manfred was also presented with the "Award of Merit", as his model was considered the best in all classes. Runner-up to Manfred was E. Bluemfeld, Yeoville, whose model of a Gantry Crane was exceptionally well built and attracted a great deal of attention. The Fair covered hobbies of many different kinds and, as always, attracted many visitors.

## Circular Drive Reverse Mechanism

Fig. 1. A novel circular drive reverse mechanism.



To construct this mechanism, which is shown in Figs. 1 and 2, first bolt two  $5\frac{1}{2}$ " Angle Girders 1 to the flanges of two  $3\frac{1}{2} \times 2\frac{1}{2}$ " Flanged Plates 2, at the same time placing the three pairs of bearings 3, 4, and 5 in position. Mount a Crank Handle with a 1" Pulley 6 fitted to it, in the Corner Brackets 3. Now secure to a  $4\frac{1}{2}$ " Rod 7 a  $\frac{3}{4}$ " Sprocket Wheel 8 and a Crank 9. Bolt another Crank 10 to the Crank 9, and place a spring loaded  $1\frac{1}{2}$ " Rod 11 freely in the boss of the Crank 10. By pulling the Collar 12 the end of the Rod 11 can be withdrawn from the hole in Strip 13. A Face Plate 14 is attached to a 3" Sprocket Wheel 15 with two 2" Screwed Rods 16, care being taken to ensure that

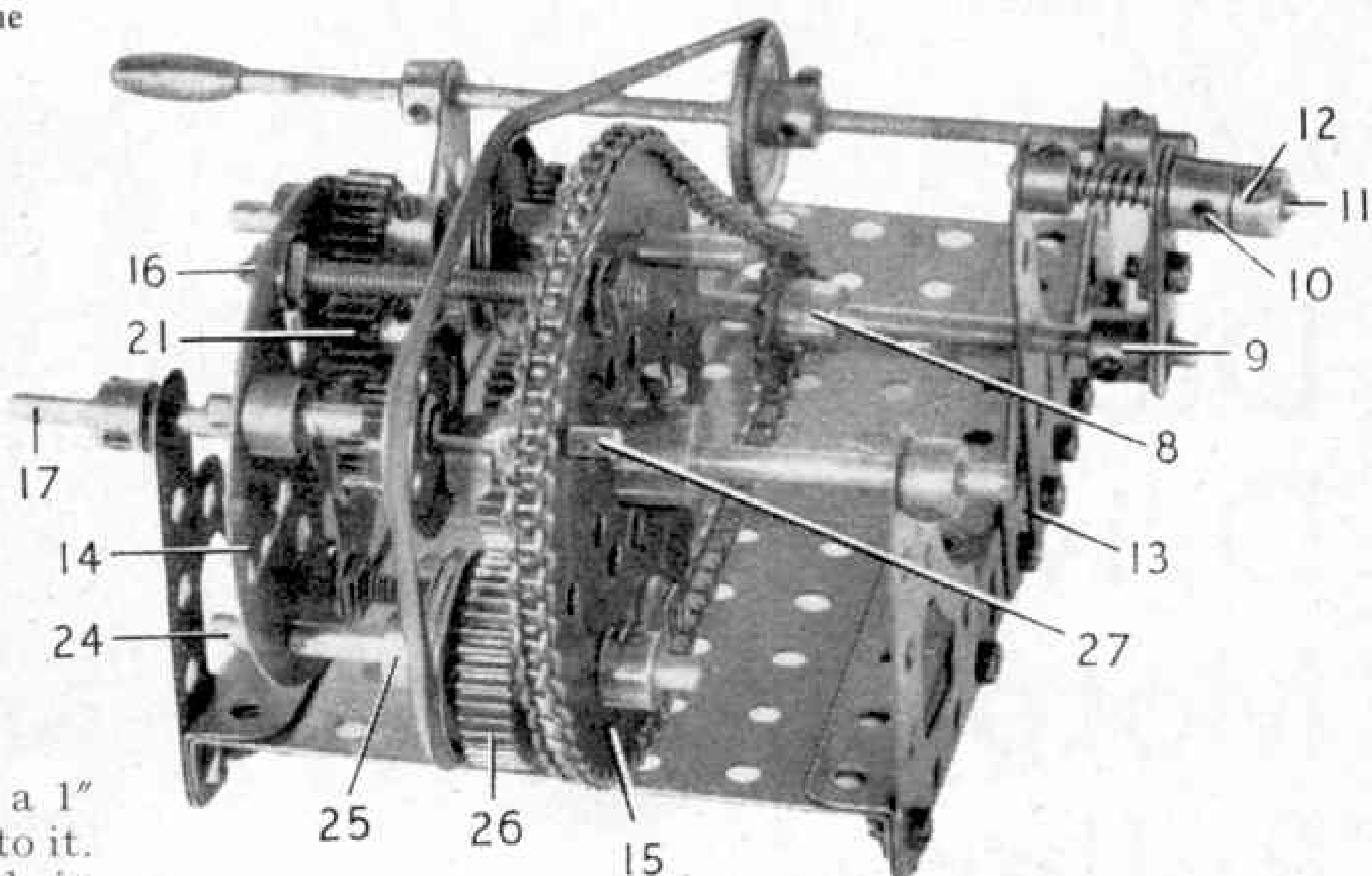


Fig. 2. Another view of the circular drive mechanism.

the Rod 17 is free to revolve. Now mount a 1" Gear Wheel 18 and a  $\frac{1}{2}$ " Pinion 19 on the Rod 17, between the Face Plate and the Sprocket Wheel.

On a  $\frac{3}{4}$ " Bolt 20 a  $\frac{1}{2}$ " Pinion 21 is placed to engage with the Pinion 19. A  $2\frac{1}{2}$ " Rod 22 carries another  $\frac{1}{2}$ " Pinion and a 1" Pulley 23. A similar Rod 24 has a 1" Pulley 25 and a 1" Gear Wheel 26 secured to it. Two 2" Rods 27 held in position by Collars as shown each carry a 1" loose Pulley 28, mounted between two Spring Clips. A length of Sprocket Chain is passed over the Sprocket Wheels 8 and 15, so that with the Rod 11 in the Strip 13 either Pulley 23 or 25 is in the farthest-away position from the Pulley 6. To reverse, pull out Rod 11 from the Strip 13 and turn the Crank 10 two revolutions.

When the Crank Handle is turned, the Pulley 6 drives either the Pulley 23 or 25,



and transmits the drive to the Rod 17 by either the  $\frac{1}{2}$ " Pinions or the 1" Gear Wheels.

#### A Simple Automatic Brake for Cranes

The mechanism shown in Fig. 3 is a simple brake arrangement for small model cranes, in which the brake is automatically applied when the drive is disengaged. It was sent to me by E. Truboden, Buenos Aires, Argentina.

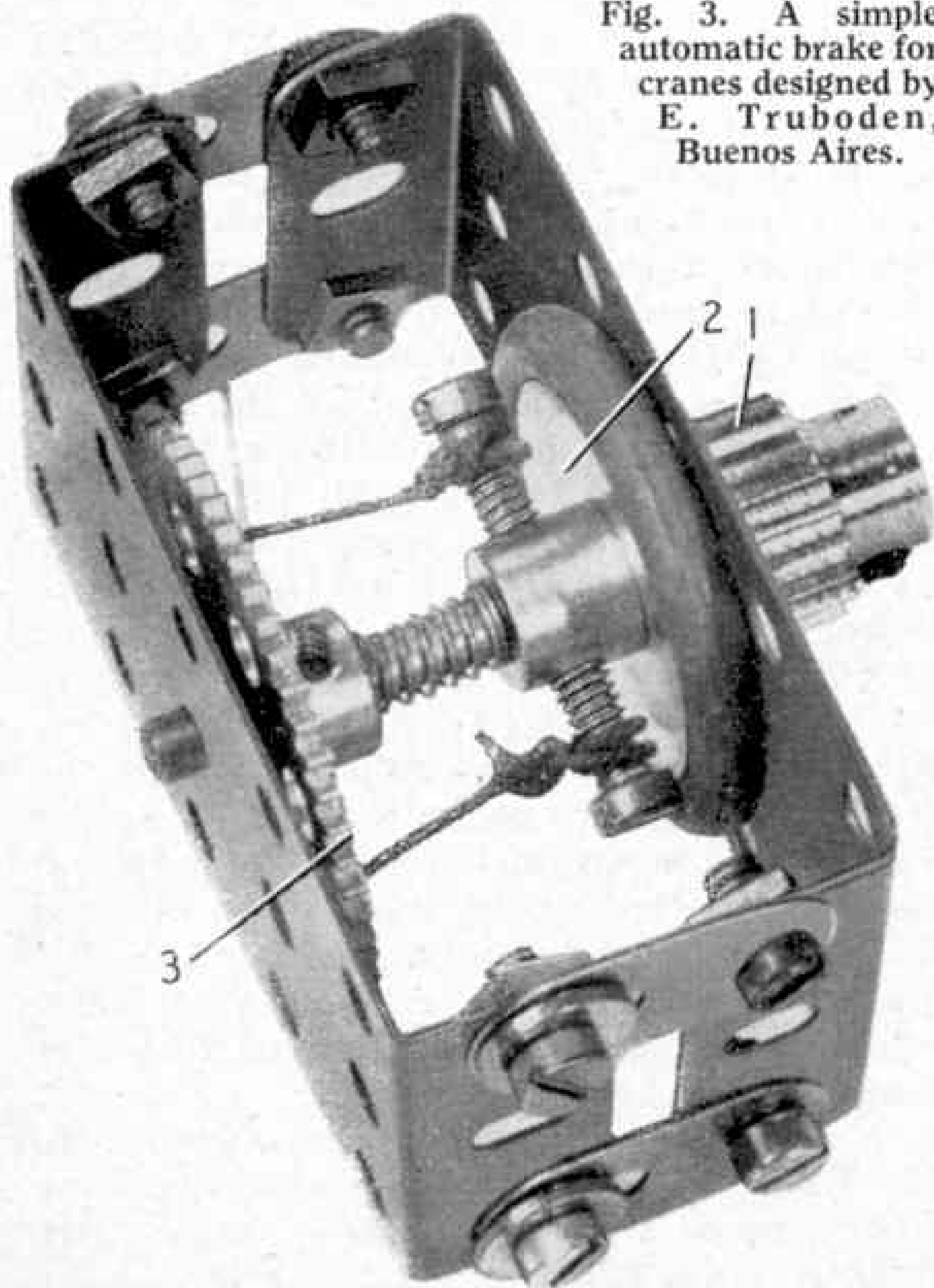
The casing for the mechanism can be made from any suitable arrangement of Plates or Strips. A Pinion 1, a 1" Pulley fitted with a Rubber Ring 2 and a Gear Wheel 3, are carried on a Rod, the Gear Wheel and the Pulley being separated by a Compression Spring as shown. Two  $\frac{3}{8}$ " Bolts are used to fix the Pulley to the Rod, and a length of cord attached to one of these Bolts passes through a hole in the Gear Wheel and behind it as shown, and is then brought back through another hole and fastened to the other  $\frac{3}{8}$ " Bolt. The Gear Wheel is free on the Rod and a Washer is used to separate it from the casing.

The drive is taken through the Gear Wheel, which as it turns, pulls the Pulley away from the side of the casing and so releases the brake. When the drive ceases, the brake is automatically applied, as the Gear Wheel is no longer able to hold the Pulley away from the casing.

\* \* \* \*

Many Meccano model-builders design and develop from time to time mechanisms of various kinds, and I invite them to send me details and photographs or sketches of their devices so that I can include them, if suitable, in an *Among the Model-Builders* article.

Fig. 3. A simple automatic brake for cranes designed by E. Truboden, Buenos Aires.



A New Model  
for  
Outfit No. 7

# Diesel Driven Motor Roller

## Diesel Driven Motor Roller

The side of the model shown in Fig. 1 consists of a  $5\frac{1}{2}'' \times 2\frac{1}{2}''$  Flexible Plate 1, a  $4\frac{1}{2}'' \times 2\frac{1}{2}''$  Flexible Plate 2, a  $2\frac{1}{2}'' \times 2\frac{1}{2}''$  Triangular Flexible Plate 3, two  $2\frac{1}{2}'' \times 2\frac{1}{2}''$  Flexible Plates 4, one half of a Hinged Flat Plate 5, a  $2\frac{1}{2}'' \times 1\frac{1}{2}''$  Triangular Flexible Plate 6 and a  $2\frac{1}{2}'' \times 1\frac{1}{2}''$  Flexible Plate 7. The Plates are bolted to a  $12\frac{1}{2}''$  Strip 8 and two  $5\frac{1}{2}''$  Strips 9, and are edged at the rear by a 3" Strip extended by a  $2\frac{1}{2}''$  Stepped Curved Strip and at the front by a  $2\frac{1}{2}''$  Strip and a  $2\frac{1}{2}''$  Curved Strip. The Flexible Plate 7 is connected to the Strip 8 by a Flat Trunnion, and a No. 1 Clockwork Motor is bolted to the side as shown (see also Fig. 4).

The other side is similar to the one already

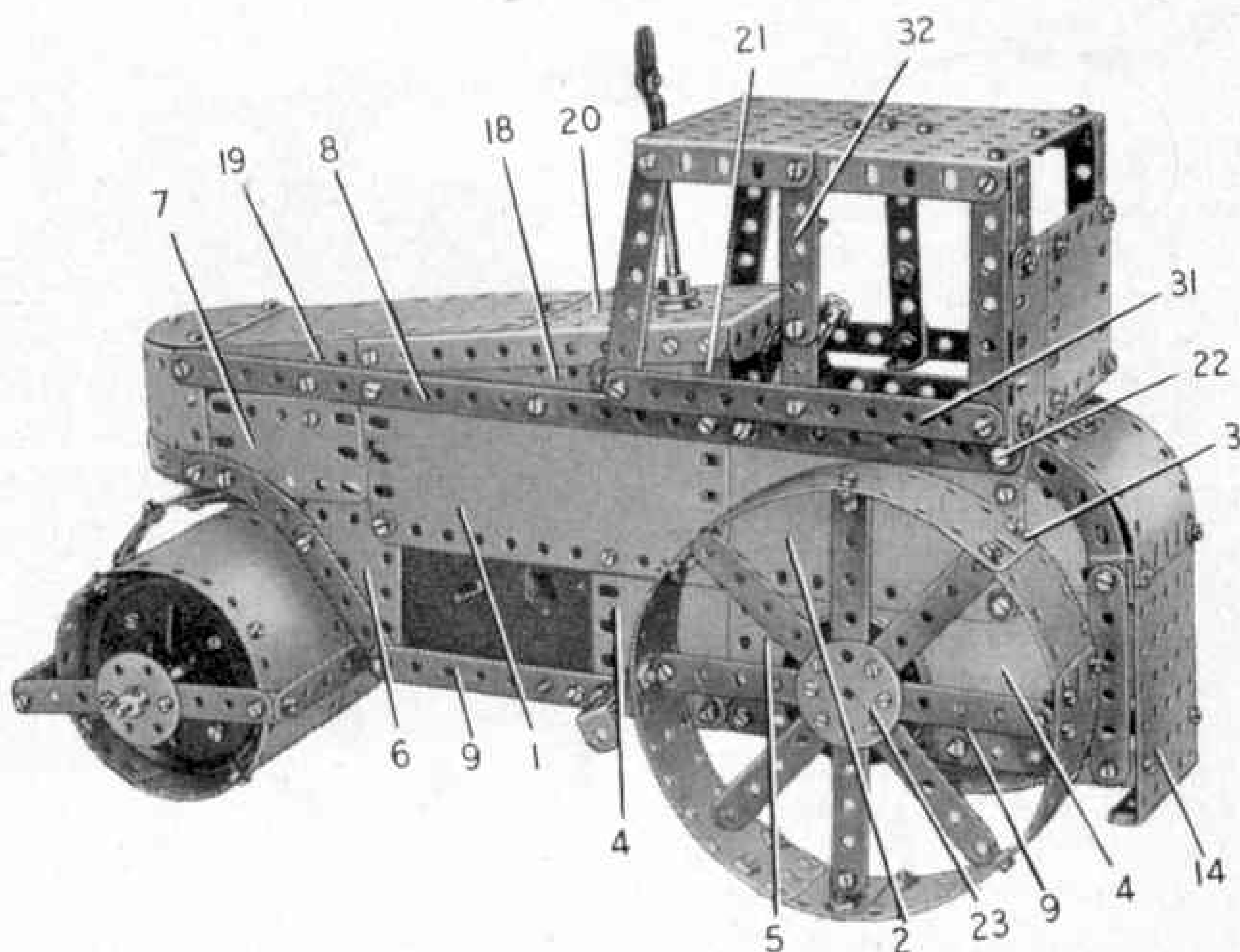


Fig. 1.

A Diesel Driven Motor Roller that can be built from Parts in Outfit No. 7.

described, except that the Plates 4 and 5 are replaced by a  $5\frac{1}{2}'' \times 2\frac{1}{2}''$  Flanged Plate 10, a Semi-Circular Plate 3 is used in place of the Triangular Flexible Plate 3, and the space occupied by the Clockwork Motor is filled in by a  $5\frac{1}{2}'' \times 2\frac{1}{2}''$  Flexible Plate.

The rounded front of the roller body is formed by a  $2\frac{1}{2}'' \times 1\frac{1}{2}''$  Triangular Flexible Plate 12 and a  $2\frac{1}{2}'' \times 2''$  Triangular Flexible Plate 13 on each side. These are arranged as shown in Fig. 3 and bolted to the ends of the Strips 8 and 11. Two Formed Slotted Strips are connected to the Plates 12 by a Fishplate, and attached to the front ends of the  $2\frac{1}{2}''$  Curved Strips of the sides.

The sides are connected at the rear by two  $2\frac{1}{2}'' \times \frac{1}{2}''$  Double Angle Strips, to which is bolted a  $3\frac{1}{2}'' \times 2\frac{1}{2}''$  Flanged Plate 14. A  $2\frac{1}{2}'' \times 1''$  Double Angle Strip 15, and two  $2\frac{1}{2}'' \times \frac{1}{2}''$  Double Angle Strips 16 and 17 are bolted between the sides.

A Flanged Sector Plate 18 and a  $5\frac{1}{2}''$  Strip 19 are fixed to each side as shown. A  $5\frac{1}{2}'' \times 2\frac{1}{2}''$  Flanged Plate 20 is secured at the front to the Strips and the Flanged Sector Plates, and is supported at the rear by  $5\frac{1}{2}''$  Strips 21 bolted to the sides. The Flanged Plate 20 is extended forward by a  $5\frac{1}{2}'' \times 2\frac{1}{2}''$  Flexible Plate and a Semi-Circular Plate, which are connected to the ends of the Strips 8 and 11 by Angle Brackets.

A  $1\frac{11}{16}''$  radius Curved Plate is bolted to the Flanged Plate 14 and is attached by a Fishplate to a  $2\frac{1}{2}'' \times \frac{1}{2}''$  Double Angle Strip held by bolts 22.

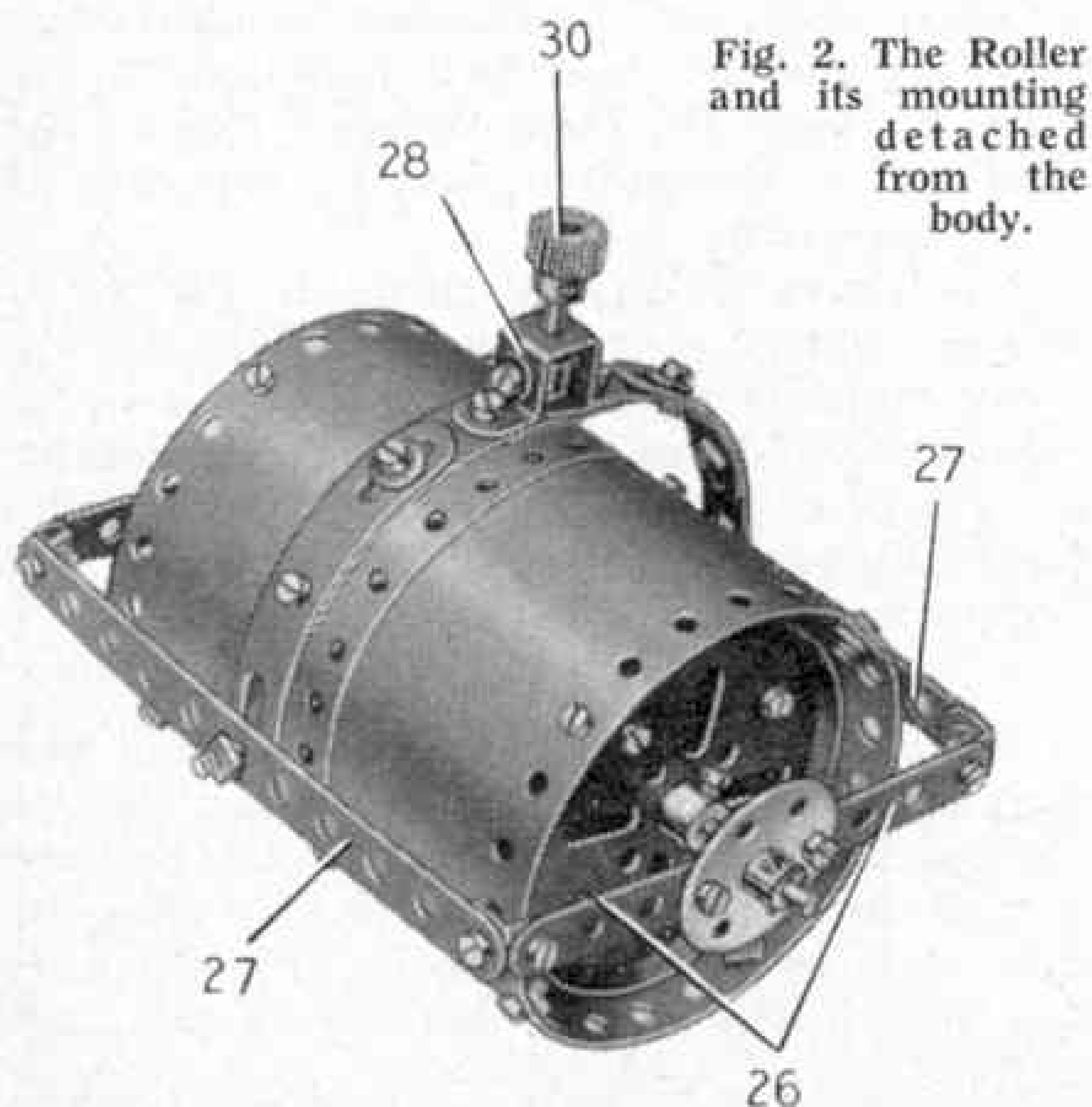


Fig. 2. The Roller and its mounting detached from the body.



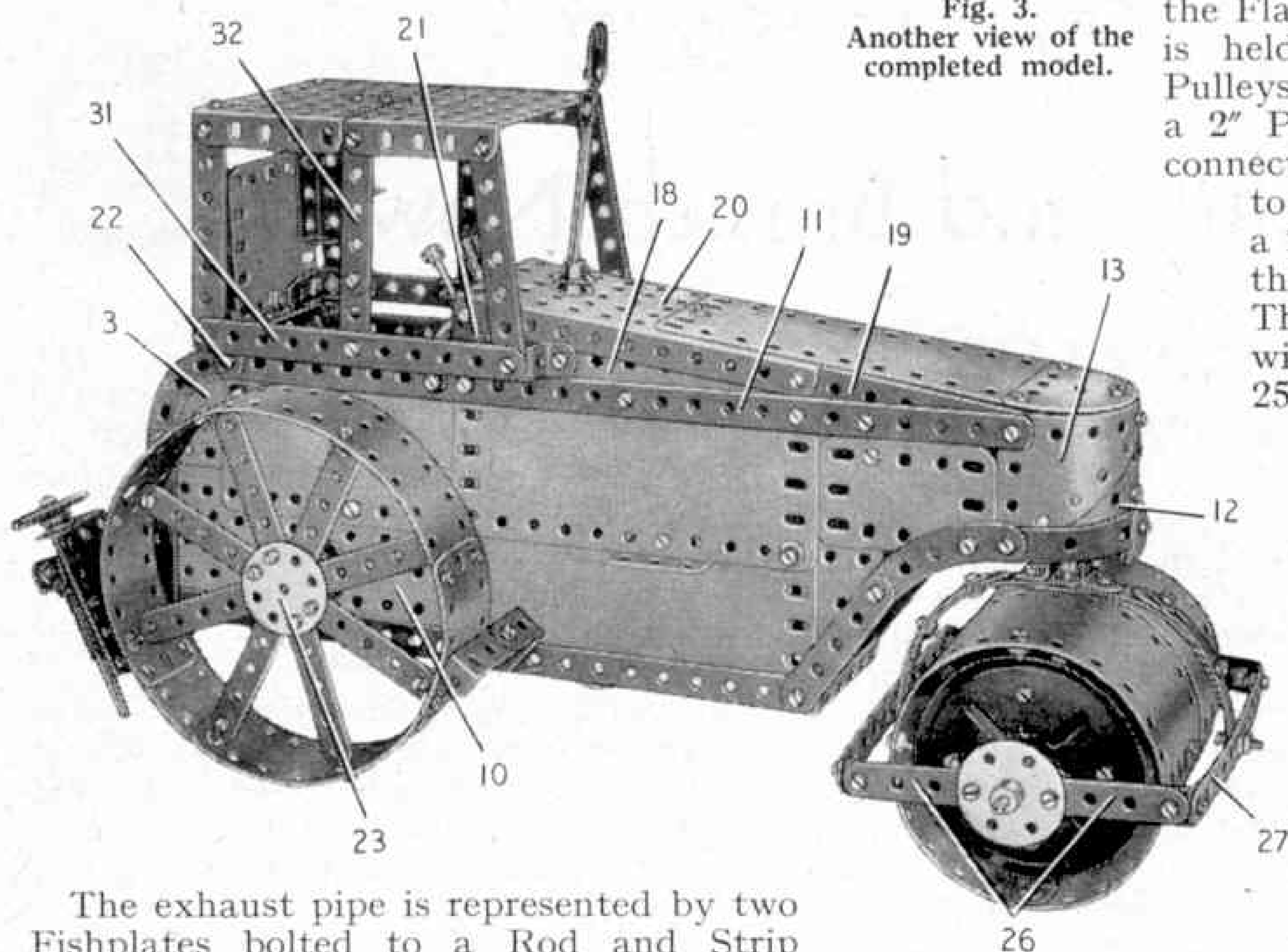


Fig. 3.  
Another view of the  
completed model.

the Flanged Plate 10, and is held in place by 1" Pulleys. The Rod carries a 2" Pulley 24, which is connected by a Cord belt to a  $\frac{1}{2}$ " fixed Pulley on a 2" Rod mounted in the Motor side-plates. The 2" Rod is fitted with a 57-tooth Gear 25 which engages a  $\frac{1}{2}$ " Pinion on the Motor driving shaft.

The Motor brake lever is extended by a Right-Angle Rod and Strip Connector fitted to one end of a 4" Rod and lock-nutted to the lever by a  $\frac{3}{4}$ " Bolt.

The Rod is passed through a hole in the Double Angle Strip 15 and a second

Right-Angle Rod and Strip Connector is placed on it.

A Rod and Strip Connector is lock-nutted to the Motor reversing lever and to it is fitted a  $4\frac{1}{2}$ " Rod. This Rod also passes through the Double Angle Strip 15 and it carries a Collar at its upper end.

The front roller (Fig. 2) is made by bolting across each of two 3" Pulleys a  $3\frac{1}{2}" \times \frac{1}{2}"$  Double Angle Strip and a  $3\frac{1}{2}"$  Strip. Two  $12\frac{1}{2}" \times 2\frac{1}{2}"$  Strip Plates are curved and bolted together lengthways and attached to the lugs of the Double Angle Strips. The roller is mounted on a (Continued on page 619)

The exhaust pipe is represented by two Fishplates bolted to a Rod and Strip Connector, which is fitted to one end of a  $3\frac{1}{2}"$  Rod. The Rod is clamped by a  $\frac{1}{2}"$  and a 1" Pulley in the Flanged Plate 20.

#### Rear Rollers and Driving Mechanism

Each of the rear rollers is made by bolting two  $5\frac{1}{2}"$  Strips across the face of a Wheel Disc 23. These Strips clamp a further  $5\frac{1}{2}"$  Strip centrally across the Wheel Disc, and two  $2\frac{1}{2}"$  Strips are bolted in position to make a total of eight spokes in each roller. One of the  $5\frac{1}{2}"$  Strips is attached by two  $\frac{3}{8}"$  Bolts. In one of the rollers a 2" Pulley is placed over the  $\frac{3}{8}"$  Bolts and is held in place by nuts, and in the other roller a Bush Wheel is similarly attached. The Bush Wheel and the 2" Pulley are used to fix the rollers to the rear axle.

The rim of each of the rear rollers is made from three curved  $5\frac{1}{2}" \times 1\frac{1}{2}"$  Flexible Plates and two curved  $2\frac{1}{2}" \times 1\frac{1}{2}"$  Flexible Plates.

The rear axle is a 5" Rod mounted in the centre hole of the half of the Hinged Flat Plate 5 and in a hole in

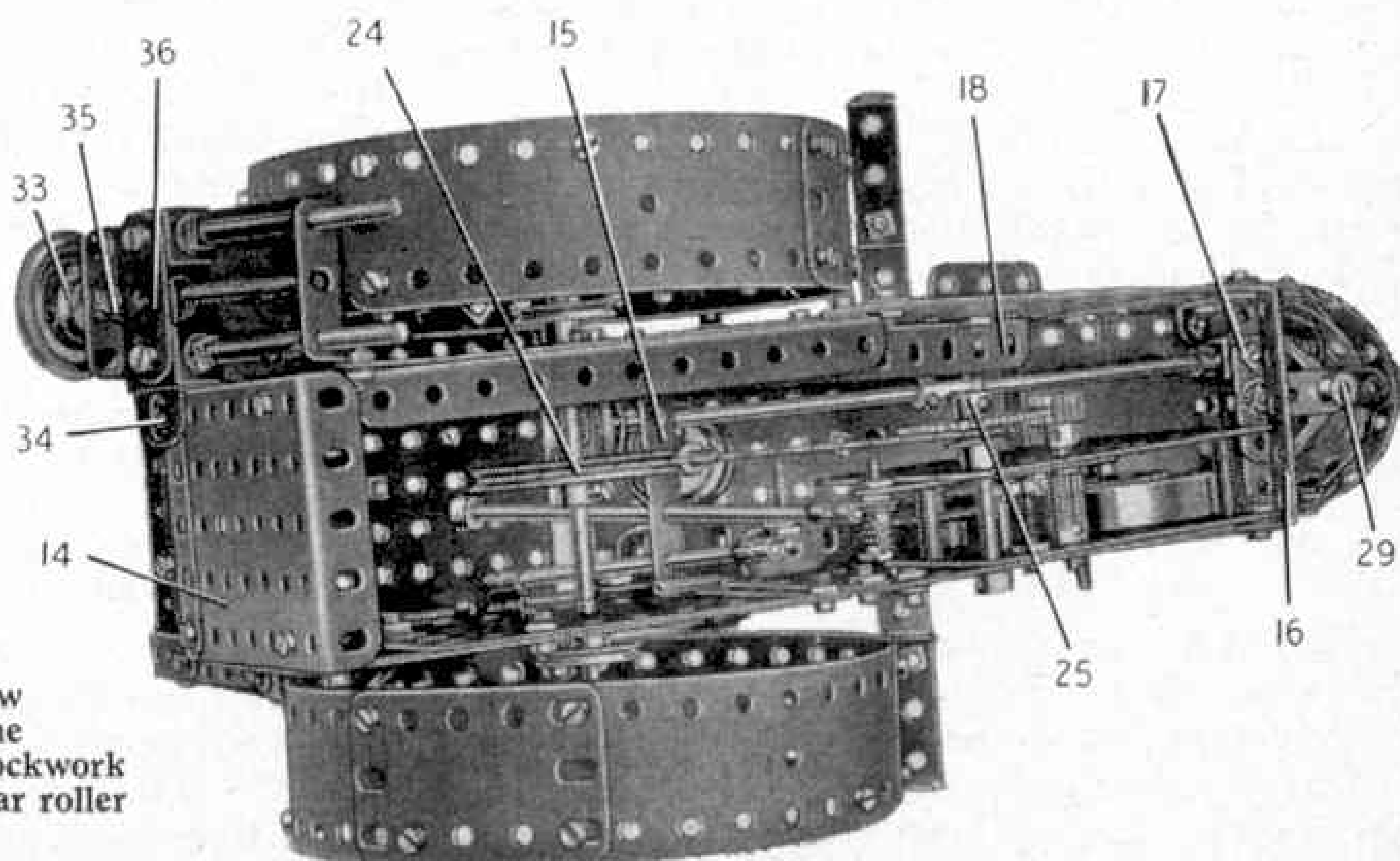


Fig. 4. This underneath view of the Motor Roller shows the location of the No. 1 Clockwork Motor and the drive to the rear roller axle.



## WITH THE SECRETARY

# Club and Branch News



### A MECCANO CLUB ON TV

THE Meccano Club which flourishes at Maylands, in Western Australia, has long been noted at Headquarters for its enthusiasm and enterprise. It recently scored another "hit" by getting included in a local television newsreel, an item of publicity that is bound to have added to the Club's prestige by making known its aims and worthwhile achievements to thousands of viewers in that part of Australia who may not previously have heard of it.

The occasion arose when Lynsey Carter, a senior member of the Club, arranged with the TV station ABW to visit the Club during an end-of-session exhibition. The camera crew and reporter duly arrived, and spent a couple of hours taking shots of members engaged in various activities, such as building and demonstrating models, operating the Club workshop tools, and using the books, films and records in the Club library. The final edited film only took two minutes of the news time when it appeared in the local newsreel service of ABW Channel 2 but, reports Warren Bransby, the Club Secretary, "it was the most comprehensive and accurate piece of publicity the Club has ever had. One of the best shots was of our six-year-old mascot, Graeme, seated on the table and deeply interested in Alan Vidler's Ferris Wheel."

The Maylands M.C. was able to arrange the loan of a TV set from a local retailer in order to see themselves in this particular news broadcast. The broadcasting company concerned have promised to present the film to the Club when it is received back from Sydney. It will be a thrilling addition to the Club's souvenirs.

Congratulations, Maylands M.C.

### CLUB NOTES

BORDEN GRAMMAR SCHOOL (SITTINGBOURNE) M.C.—Regular meetings were resumed in September. Extensions to the Club layout are being carried out, additional points, etc., having been bought with funds

kindly provided by the Headmaster. The new work includes a loop to connect the inner and outer tracks of the layout. At one meeting a race was run with simple Meccano chassis equipped with Meccano Clockwork Motors. *Secretary*: C. Walker, 5 Woodstock Road, Sittingbourne, Kent.

### AUSTRALIA

FREMANTLE AND DISTRICT M.C.—The Club are again to take part in the Annual Exhibition in Fremantle Town Hall, and models to be exhibited will include a grab crane, steam engine, bridge, walking robot, and many smaller models. *Secretary*: Ron McPhee, 64 Allen Street, East Fremantle.

MAYLANDS M.C.—Attendances dropped sharply during the school holidays as many members left for the country. One weekend during the holiday period was organised so that the remaining members could work on overhauling the Club material, and they did a first-rate job. Alan Vidler led the Meccano section, which checked the Outfit to make certain that everything was in its place. They also checked wheels for loose bosses, retapped threads where necessary and repaired damaged parts. Warren Bransby was in charge of the electrical section, which attended to replacing worn transformer cords, fitting radio and television suppressors to transformers and motors, and also did other electrical maintenance work. Lionel England took charge of the section checking the library books, and Howard Montagu's group checked the gramophone records and brought the club record library up to date. The Club "Model of the Month" and "Idea of the Month" awards went to Alan Vidler for a fine original model four-wheel drive chassis, with gear shift control on the steering column. *Secretary*: Warren Bransby, 90 Crawford Road, Maylands, Western Australia.

### NEW ZEALAND

ST. JOHN'S (DUNEDIN) M.C. — The Affiliation certificate has been received and approved, and was hung in the Club Room by Mr. S. Harbour, the President. A Club Committee has been formed. R. Mercier,



**CHRISTMAS GREETINGS**

*Once more the occasion has come round for me to wish A Merry Christmas to every member of the Meccano Guild and of the Hornby Railway Company, and this I do with the greatest pleasure. In the great majority of Clubs and Branches plans will be in hand already for concluding the first of this winter's Sessions with an exciting Christmas Party. The goodwill expressed on all sides on this most happy occasion is a reflection of the spirit of good comradeship that is the very essence of Club and Branch life, and on this account it is one of the most important social occasions in our particular calendar.*

who missed a place on the Committee by one vote, has been appointed Librarian, and as the library requires a good deal of re-organisation this job is likely to keep him busy. Friendly rivalry continues between the two model-building groups, known as the *Washers* and *Sprockets* respectively, and useful discussions are held after models they have built have been examined and marked. The Secretary has given an interesting and helpful series of talks on *The construction of an Automobile Chassis from Meccano Parts*. After the final talk members indulged in a strenuous tug-of-war, followed by an excellent tea and a film show. This was voted a most successful afternoon, and it is hoped to arrange another similar meeting later on. *Secretary*: William John Earl, 60 Ann Street, Roslyn, Dunedin, New Zealand.

**BRANCH NEWS**

**ST. ANNES Y.M.C.A.**—This new Branch held its opening meeting on September 9 in the model railway room of St. Annes Y.M.C.A. A fairly complicated Branch layout has been put down on special staging round the room, and already some very successful track running has been carried out. Members have taken part in railway quizzes, and have also been busy modelling scenery for the layout. At the time of writing arrangements are being made for a party of nine boys in charge of Mr. W. H. Pickett, the Branch Chairman, and Mr. B. Baldwin, the Treasurer, to visit the Sixth Model Railway Hobby Show at Central Hall, Westminster, London. The visit will also include a quick trip round London. *Secretary*: Mr. J. Bingley, St. Annes Y.M.C.A., St. Alban's Road, St. Annes-on-Sea.

**REVIEWS****"The Old Lady Drives to Dolgoch"**

(Record LP600, price 37/6, including P.Tax)  
Stanley Schofield Productions Limited,  
London

The narrow gauge Talyllyn Railway in Merionethshire, North Wales, runs from Towyn-on-Sea, some seven miles up a lovely valley, into the mountainous country round Cader Idris. It has been the subject of special articles in the *M.M.* from time to time, and the most recent one—in the March 1958 issue—told the story of the decline of this interesting little railway, and of its resurrection and preservation by the group of enthusiastic volunteers who founded the Talyllyn Railway Preservation Society in 1951.

Now, the history of this narrow gauge line, which is within a few years of its centenary, has been told again; this time on a 12-inch long-playing record with the intriguing title "*The Old Lady Drives to Dolgoch*". The "Old Lady", of course, is Locomotive No. 1 *Talyllyn*. The record begins with a brief résumé of the line's history told by the Rt. Hon. the Earl of Northesk, President of the Talyllyn Railway Preservation Society. Other officials of the Society who add to his story are Pat Whitehouse, the Secretary, and Harold Parker, the Manager. Typical sounds of day-to-day activity of the railway form an appropriate, but sometimes rather distracting, background to their narratives.

On the reverse side of the disc we are taken on a trip behind *Talyllyn* as it heads the train on a run from Towyn to Dolgoch and back. This is a fascinating picture in sound, with the noise of the little train as it puffs energetically along its course, the bustle of activity at the halts, and the cheerful conversations of passengers and staff. Finally, the double journey completed, we accompany *Talyllyn* as it goes off to the shed.

**Trains Illustrated Annual**

Edited by G. Freeman Allen  
(Ian Allan Ltd., price 10/6)

This has now become an eagerly-awaited publication, its popularity being no doubt due to the varied contents and wealth of illustration. The subjects dealt with this year include a survey of locomotive performance over the last 50 years on the Euston-Crewe Line, memories of the Great Central and Glasgow and South Western Railways, and, in contrast, modern times on the London Tilbury and Southend Line. Overseas railway subjects also are included.

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For other Stamp Advertisements see also pages 636 and 638



## For Stamp Enthusiasts

# Perfins

By F. E. Metcalfe

**P**ERFINS. What on earth are they? The short answer is that they are stamps with initials perforated in them—a reply that will bring a snort of contempt from many collectors who have been in the habit of throwing away, as worthless, stamps thus treated. Many of these perfins, however, are worth quite a few shillings and, indeed, many enthusiasts collect them. So much so that an American stamp magazine, *Linn's Weekly Stamp News*, which claims to have the largest circulation in its line in the world, recently and for the second time devoted a whole number to these items. And as further proof of the growing importance of this field of collecting, I must mention that it was a perfin collection which won top award in America in an annual contest for all kinds of stamp collections.

Stamps are perforated in this way for identification purposes. This is very necessary, as these "little bits of paper" are easy to pilfer, and without some kind of mark no one could be sure which was which. All that is obvious, but how did the practice of perforating stamps with initials start? Well, before Postal Orders had been invented it was usual for stamps to be used for the remitting of small sums by post—and not so small, either, as the Post Office would kindly change up to a few pounds' worth. As a matter of fact, the G.P.O. London will still change current mint stamps for cash, I believe, though they charge a commission of 5 per cent., and that is reasonable enough. Nowadays such transactions are unusual, as Postal Orders are here to do the job of remitting small sums.

However, in the days when it was quite a usual and normal operation to go along to

the Post Office to cash a few stamps, light-fingered gentry found these bits of paper easy prey, and it must have been very difficult to catch such people out even when they were found with the stamps in their possession.

All kinds of ideas were suggested to put a check on such doings, but the first one which did the trick to the satisfaction of everybody (except the tricksters) was a machine invented by a Mr. Sloper in 1868, which perforated patterns on the



stamps.

The Post Office welcomed the perforating of the designs and gave the plan its blessing, just as in the past it had welcomed the plan for perforating the edges of stamps to assist separation. The idea caught on, and within a few years most of Europe had adopted the plan. It is claimed that about 100 countries now permit these perforations, although strangely enough the United States was one of the last to fall in line with the rest of the world. Now it is claimed that there are 7,000 types of perfins in the U.S.A. against 10,000 in our own country.

Whilst most of the perfins in existence are of a private character (that is perforated by the particular firms using the stamps) some postal administrations also use the perforating method. For instance, Australia before printing the letters O S (for official service) punched the letters in the stamps. There are other cases of the official use of perforations to serve instead of an overprint and, of course, ordinary collectors include such stamps in their collections as a rule, and do not consider them as beyond the pale.



Mind you, not only initials are punched into stamps. For instance, many years ago the Japanese Navy used some stamps where an anchor was the perforated design, and I imagine that such stamps will be very popular with Japanese specialists. And what about catalogues? Yes, several of these exist, which is proof of the

(Continued on page 638)

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For other Stamp Advertisements see also pages 634 and 638

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# Stamp Gossip

## CHARITY BEGINS WITH STAMPS

IT is not to be supposed that many stamp collectors look at it that way, but nevertheless it is a fact. Stamps with surcharges designed to raise funds for all kinds of charitable objects are being issued all the time, and in buying them collectors subscribe quite a lot of money to one charity or another. The three stamps issued by Belgium on August 3 this year are a case in point.



The actual franking value of the issue was 9f. 40c. but the post office charged 14f., the difference 4f. 60c. going to a fund to aid the victims of the trouble in the Congo. Hundreds of similar cases could be cited, as your catalogue will show.

Britain has never issued such stamps and, in fact, very few countries in the

Commonwealth have ever done so, New Zealand and Fiji being the only exceptions I can call to mind. And, while in those cases the objects of the charities to be assisted were worthy of full support, I am not too sure that doing it with stamps was the best of methods. At any rate, in the case of Fiji the results apparently were not considered satisfactory, and after a couple of sets of modest face value a scheme which was supposed to be a yearly affair faded out.

## A WORLD OF CHANGE

The world is changing before our very eyes, and how the publishers of geography books keep them up to date beats me. One job I would not like nowadays would be teaching geography, although I must admit that years ago I would rather have liked such a task. One schoolmaster said to me recently, "I have to be on my toes, and right up to date with what is going on in the world, for I have



two pupils who collect stamps, and they love to catch me out."

Anyhow, newly-issued stamps *do* reflect all that is going on, and those of our own Commonwealth are no exception. For instance, Cyprus recently overprinted the then current stamps, to mark their new-found independence. Nigeria issued a set of stamps for the same purpose, and Ghana is issuing a new set about every month to commemorate one object or other. In a word, the changing world is being reflected very extensively in postal issues.

Of course, we cannot attempt to collect all the new stamps which are being issued, but we can keep up with those of our own British Commonwealth. Even if we are not able to take full sets of the definitive issues (the special issues are generally of low face value, except those of Ghana, and these present no problem) we can go in for the short sets, which go up to 1/- or 6d., and even those up to 3d. are quite representative, and this is an important point.

Now is a good time to start "QE" stamps, as collectors call them, for the authorities are starting up a world-wide campaign to make these issues more popular, and there is every reason to believe that they may



perhaps increase in price in consequence. The Commonwealth Catalogue of "QE" stamps, which deals with "QEII" stamps, is

now out, and in addition there will be the Two Reigns catalogue devoted to both "QEII" and "KGVI" issues. Either one or the other of these books will help you to find your way about. I do honestly believe that our own Commonwealth stamps—if you want to take a

(Continued on next page)

**Stamp Gossip—**

*Cont. from previous page*  
group instead of just an odd country or so—take a lot of beating. In fact, they *cannot* be beaten, if you wish to take the re-sale value into consideration, as some of us must, when, as often happens, we spend more than we can really afford on our hobby.

**RUBBER**

Earlier on in these Notes I mentioned how stamps reflect most of what is going

**For Stamp Enthusiasts—** (*Cont. from page 635*)

widespread interest in this particular line of collecting. There is in Britain a Perfin Study Circle, and I understand that a catalogue of our own country's perfins is on the way. As the country where the idea originated, however, we seem to have been beaten to it, as far as listings are concerned, for an Argentine catalogue exists, and there is one in Canada.

Regarding Argentina, the light-fingered gentry are, I suppose, no more prolific there than anywhere else. No doubt it is just a case of being more careful as, with the exception of Ceylon, perhaps more perfins come from that South American republic than from any other country I know. I remember getting quite a parcel of Argentine stamps some time ago. There were plenty of 50 p. stamps in the lot, and as I only gave them a casual glance at the time I did not notice the punch holes. I

on in the world, and an issue of two values, which was released by Malaya on September 19, is another example. Rather unkindly, under the circumstances, Malaya—for the first time ever—went to Japan to get the stamps printed, and they were issued to mark the National Rubber Research Conference. The design on the stamp, which is illustrated on this page, is nothing very special. The plant shown is supposed to be a seedling rubber tree.

**TIP OF THE MONTH**

Dealers are finding it hard to get nicely cancelled copies of the 1s. 3d. value of the Great Britain "General Letter Office" issue. The stamps are not rare, and they can be picked up for a few coppers, when found, but if any come your way stick to them as they will be good "swops" later on.

saw them later, and not being a perfin fan I was very disgusted, and was glad to dispose of the stamps at less than cost. Italy and Portugal are other countries where many firms punch their stamps. In the United States at least, album pages for mounting the stamps exist, but not in Britain I am afraid. It is quite easy,

however, to start a perfin collection and one can be gathered at very little cost.



You may have some collector friends who will be only too pleased to give you any perfin stamps they have among their duplicates and which they regard as "throw outs". Then

it is just a case of collecting in the ordinary way and mounting normally, with one important difference. The real fun lies in finding out the name of the firm to whom the initials belong. Some are quite easy. For instance, if you saw the letters ESSO punched on a stamp you would readily identify it, and similarly by exercising a bit of initiative you can identify others. You should then write neatly above or under the stamp the name and address of the firm concerned. It is quite good fun.

Well, there you are, don't throw away those perforated designs any more as worthless rubbish. The cult of perfins is growing fast, and with a British catalogue, which may be published in the near future, you will perhaps be glad that you hung on to your perfins, even if for the time being you do no more than keep them safely in your stock book.

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**Under the Mistletoe Bough**—(Continued from page 593)

the branches of trees, belongs to a genus of which there are about twenty specimens, all parasitical, but only the mistletoe proper is a native of Europe.

Mistletoe seeds are sown by birds who are attracted to the shiny, white berries. A bird seeking to get rid of the stones (or seeds) which are inside the berry scrapes its beak against a tree and, in doing this, frequently scratches the bark and helps the seed to take root.

The mistletoe flourishes on both deciduous and evergreen shrubs and trees. *Viscum album*, which is its Latin name, is most prolific on the apple tree in England, but rarely grows on the oak; while pears, poplars, hawthorns, mountain ash, lime, willow, pines and silver firs are favourite hosts. Actually, a true parasite absorbs all its food from another plant on which it lives, and, therefore, a parasite is not equipped with green leaves, since it does not manufacture any of its own food. Let us, therefore, consider the mistletoe—an evergreen, with leaves containing chlorophyll—as a semi-parasite. After the seed has been sown by a bird—notably the mistle-thrush, which takes its name from the plant—it germinates and the roots are sent into the wood of the tree at right angles. From these, suckers pass down the stem, and from the tree on which it flourishes the mistletoe obtains all its required salts and water. Through its own greenish-yellow, leathery leaves it derives carbon from the air and manufactures its own starch material. Because the host tree is leafless during part of the year, and is, therefore, unable to absorb any nourishment from the air, the mistletoe, being green all through the year, is able to supply its host with material in the winter and spring, although the semi-parasite itself has the advantage during summer and autumn.

Devonshire, Somerset, Herefordshire and Worcestershire all send large quantities of mistletoe to the London market each Christmas season, but as the plant does not grow as well in England as it does in France, where the climate is warmer, our supplies are supplemented largely from the apple orchards of Normandy and Brittany.

**Dickensian England**—(Continued from page 603)

The same can be said about some of the buildings outside London which come into his stories. For instance, there is little doubt that the Great White Horse at Ipswich is a genuine Dickensian inn, since it is carefully described in *The Pickwick Papers*. Nor can it be questioned that the King's Head, Chigwell, Essex, is the Maypole of *Barnaby Rudge*, for Dickens gives a faithful pen-picture of it and refers to its "huge zig-zag chimneys".

Odd though it may seem, Charles Dickens became a writer by accident. In his youth he aspired to become an actor, but illness prevented him from attending an audition which was to decide his future. As a result, he turned to journalism, becoming a newspaper reporter, and in course of time he became the world's greatest storyteller.

Dickens' influence on our attitude towards Yuletide celebrations has been immeasurable, and his memory is perpetuated today in a variety of ways. One of the most colourful was the introduction of an annual Dickensian Christmas Party at York, some years ago, when choir boys of the Minster Song School attended the festivities dressed as characters from Dickens' books.

**Road and Track**—(Continued from page 597)

and the footbrake the rear), stripped and repainted the chassis, stripped and rebuilt the body, re-tempered the springs and in fact took everything to pieces and put it together again. The cost of all this was £120.

The car, once roadworthy, soon became a familiar sight in Pinner and district, always spotlessly clean and a centre of attraction wherever it was parked. Numerous enthusiasts were surprised, on lifting the bonnet, to find the 750 c.c. engine as clean and brightly polished as a Motor Show exhibit.

In 1959 Tim and a friend toured the Lake District,

Scotland and North Wales—the "Chummy" disdainfully negotiating some of Britain's toughest Passes during a 1,500 mile journey. Last year, after careful preparation, the "Chummy" crossed the Channel en route for Brittany. After a trouble-free run to Paris, cruising at 35 to 40 m.p.h. and sipping petrol at the rate of 45 m.p.g., the Brittany project was abandoned. Why not the South of France?

After five days in Paris, during which time the "Chummy" caused almost as much interest in the Champs d'Elysées as a film star, Tim and his friend set off for Cannes. The "Chummy" was in every way equal to the task; Lyons, Grenoble, Gap, the Maritime Alps—nothing was too much for the thirty-three year old car with already 100,000 miles to its credit. Frenchmen, Italians and Americans—en route and in Cannes—were amazed by the exploits of the dark blue "Chummy".

The return journey was equally uneventful. By night to Annecy, the road illuminated by the "Chummy's" original headlamps, then on to Geneva, Dijon, the outskirts of Paris, Arras and Calais. Trouble? None at all other than a boiling radiator on the Alpine Passes. The tough little engine never missed a beat.

Is the "Chummy" for sale? "No," says Tim most emphatically. "Even when I am able to afford a vintage Aston-Martin or Frazer-Nash, I shall still keep the 'Chummy'. It's a wonderful little motor-car".

**The Orange: A Christmas Favourite**—

(Continued from page 621)

not continue to ripen after picking, as many other fruits do, but the cargo has to be kept at an even temperature throughout the voyage.

Today, canned oranges and orange juices, together with orange squashes, provide ever-expanding markets for this health-promoting fruit. Canneries are equipped to take in the oranges at one end (receiving them by continuous conveyor belt direct from the lorries which bring them from the orange groves) and eject them at the other end in cans neatly labelled, all without being touched by hand.

**Many By-products**

Orange juice is sent overseas in concentrated form, thus saving space without loss of food value. Indeed, no part of the fruit is wasted. The pulp left after the extraction of the juice goes into cattle foods, together with the seeds and skin, while terpene for paint is obtained from the rind. Other orange by-products include a rayon dye fixative, margarine oil, and carotene, rich in vitamin A. And, of course, the rind provides us with candied peel for cakes at Christmas and at other times.

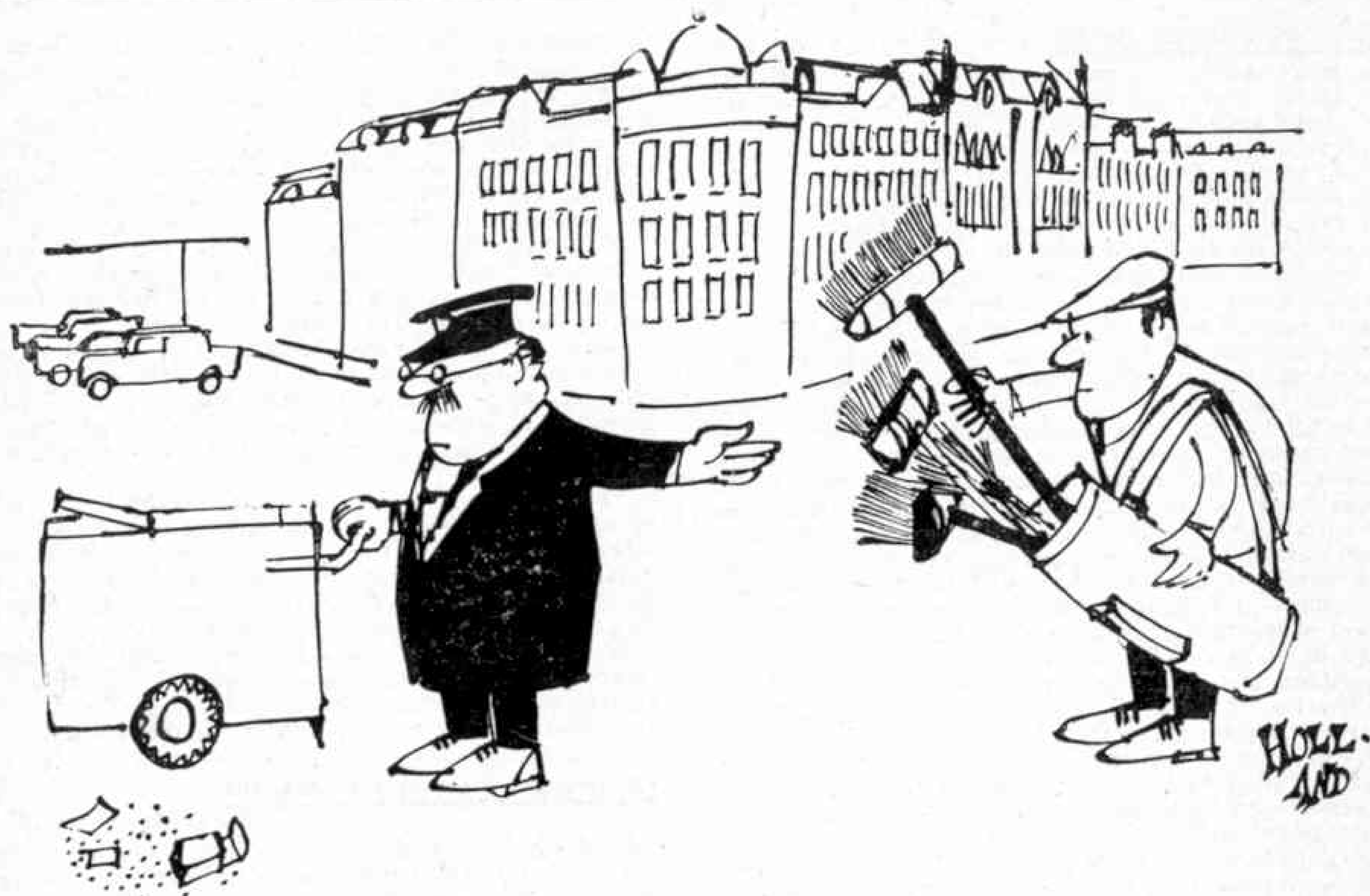
We use oranges in making marmalade—and have been doing so in Britain for well over 400 years, although originally the preserve was made from quinces, marmalade being the Portuguese name for that bitter fruit. Perhaps the strangest use for oranges in bygone days, however, was to eat them with veal. It is recorded that Cromwell was partial to that meat served with the "golden apple".

Although tastes have changed, Christmas without oranges would not be quite the same, and it is good to know that the fruit has the blessing of dieticians. Their only criticism is that some people are allergic to the acrid peel oil, so that care must be taken to avoid over-squeezing when extracting the juice.

The orange, in fact, contains more than twenty essential food elements, including fruit sugars, phosphorus, and iron. That makes it one of the most recommendable of foods, and it is especially valuable as an unrivalled source of vitamin C, particularly in winter, when such other sources as green salads and tomatoes are unobtainable.

**"M.M." BACK NUMBERS**

Copies of the January to November 1960 issues of the *Meccano Magazine* are still available, price 1/7d. each including postage. Write to the Editorial Department, *Meccano Magazine*, Binns Road, Liverpool 13, enclosing a postal order for the appropriate amount.



## Fireside Fun

Guide: "This 'ere 'ouse, sir, is where Katherine of Harragon was bitten by a mad dog."

Tourist: "Tudor, eh?"

Guide: "Yes, sir, somethink 'orrible."

Brown: "Did anyone comment on the way you handled your new car?"

Smith: "Well, one man made a brief remark."

Brown: "What did he say?"

Smith: "Forty shillings and costs!"



"Hard work never killed anybody," said the father.  
"That's just the trouble, Dad," replied the son.  
"I want to do something that has the spice of danger in it."

"Dear teacher," wrote an indignant mother, "you must not whack my boy. He is a delicate child and isn't used to it. We never hit him at home except in self-defence."

Noting a sharp increase in mid-week absenteeism, a factory manager put up this notice in the canteen:  
"Anyone desiring to attend the funeral of a relative must inform the Personnel Superintendent before 10 a.m. on the day of the match."

White-faced, a patient rushed into his doctor's office. "Oh, doctor!" he cried, "The ghosts of my departed relatives come and perch on the tops of the fenceposts all around my garden at dead of night. They just sit there, staring . . . staring. What can I do?"  
"Sharpen the posts."

## THIS MONTH'S BRAIN TEASER

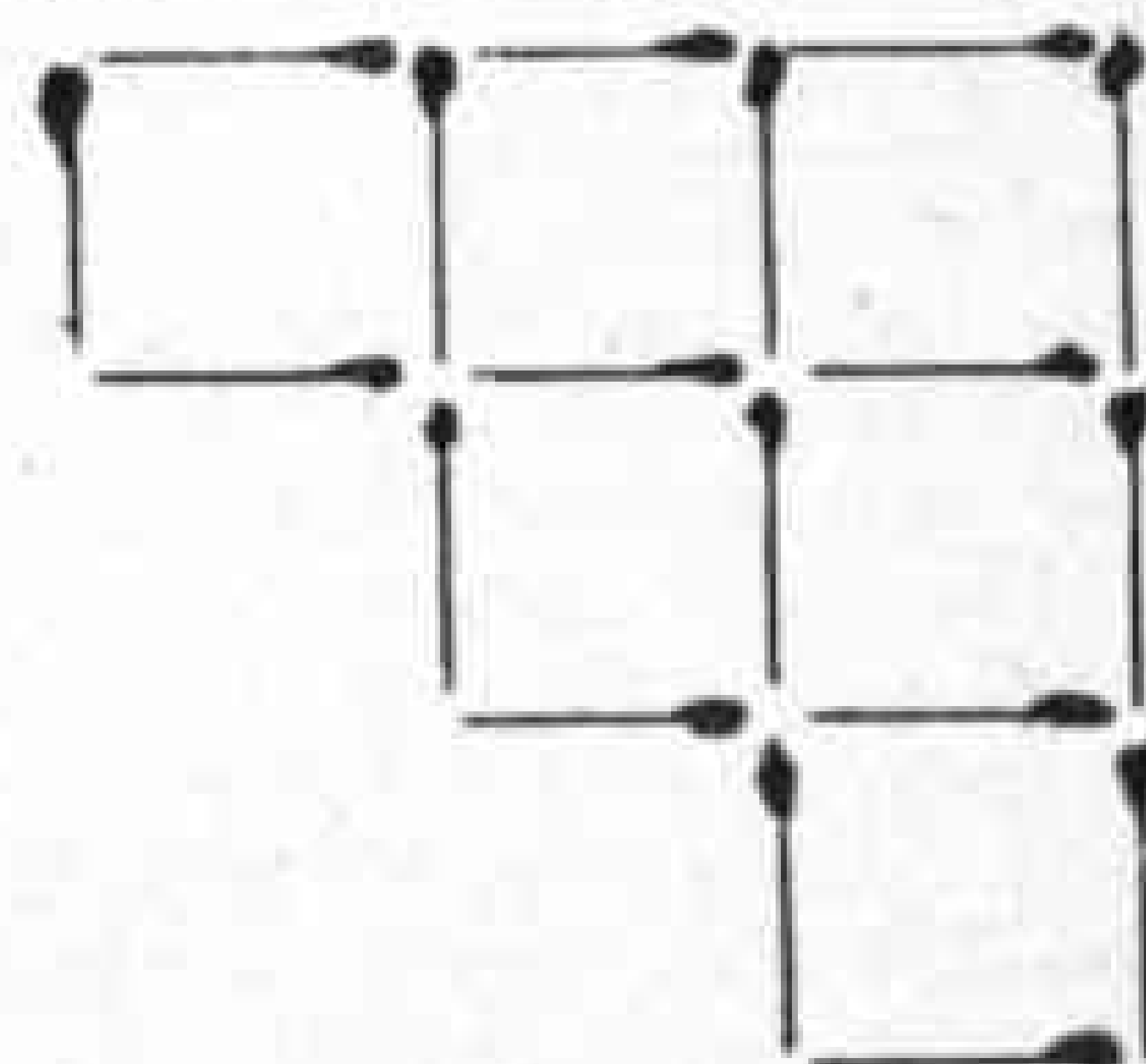
### The Detective and the Crime

A detective was describing a murder. "The weapon was a revolver" he said, and he took 18 matches and arranged them to form a gun as shown in the sketch below.

"And this is the result of the crime," he continued, picking up 13 of the matches and re-arranging them to form the victim. How did he arrange the matches?

### Answer to Last Month's Puzzle Holding Their Breath

The first boy was wrong in claiming a draw. The second boy won because he held his breath for one interval longer than the first boy.





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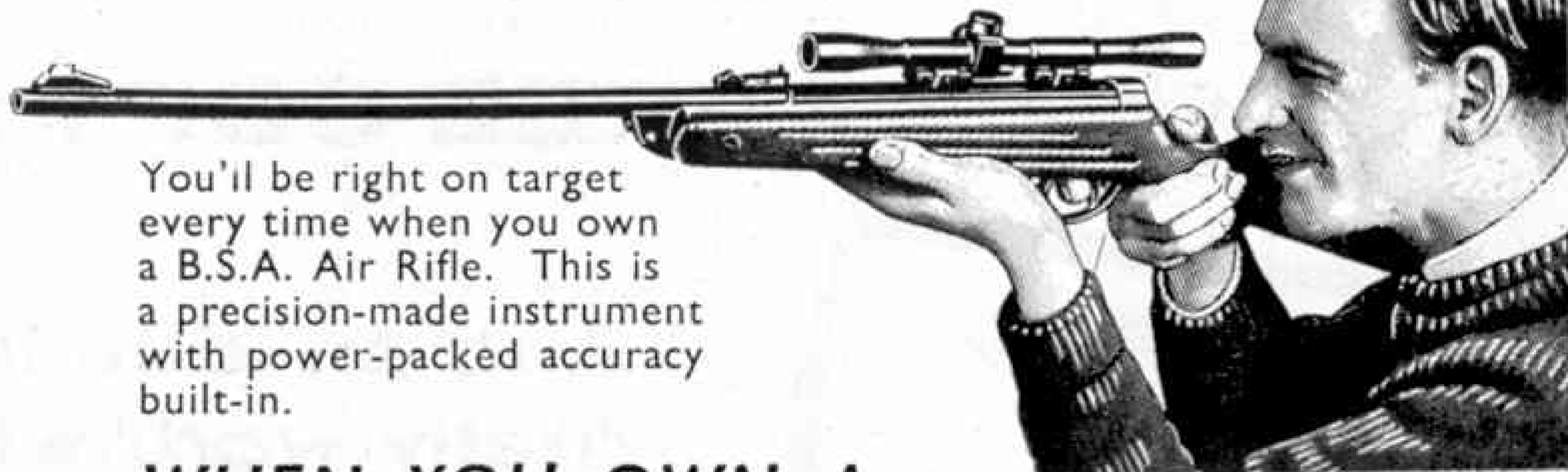
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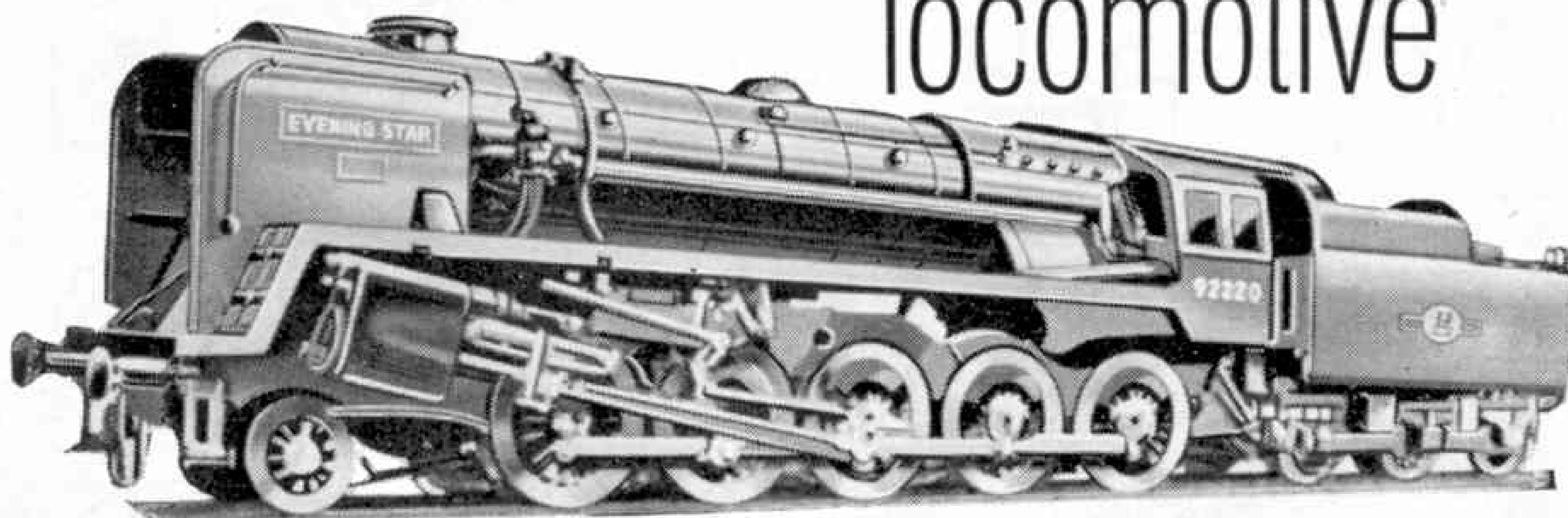
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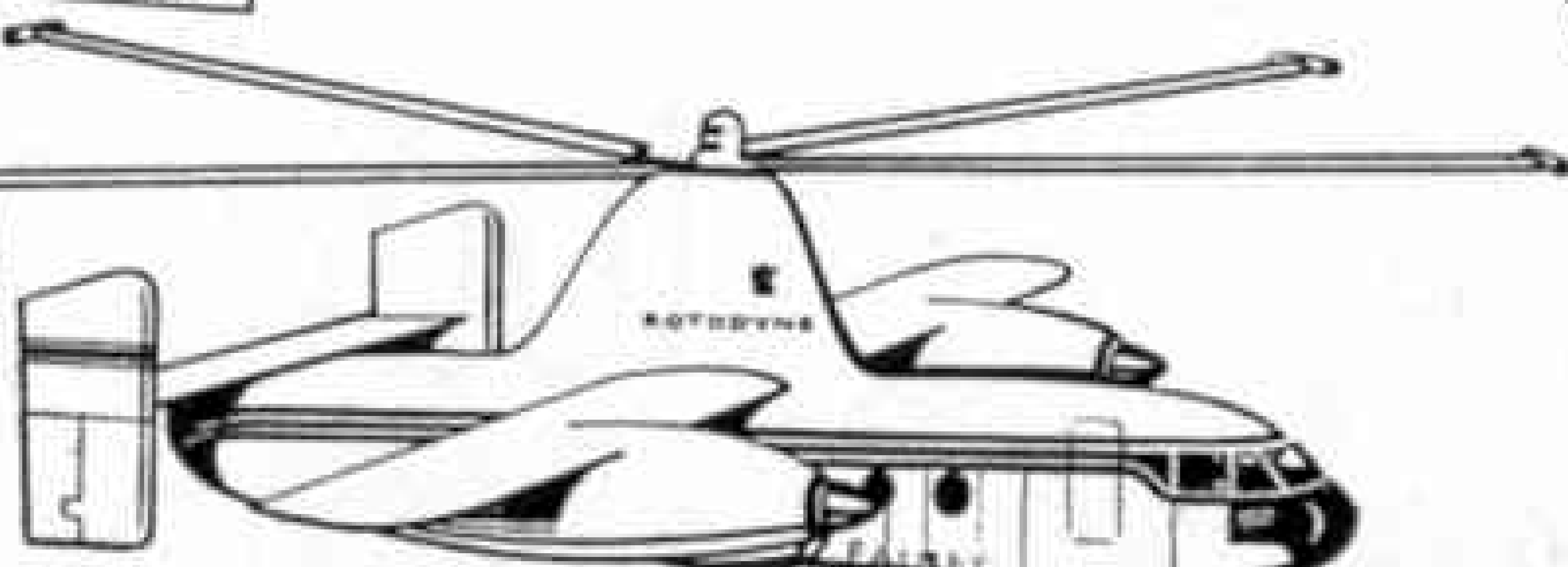
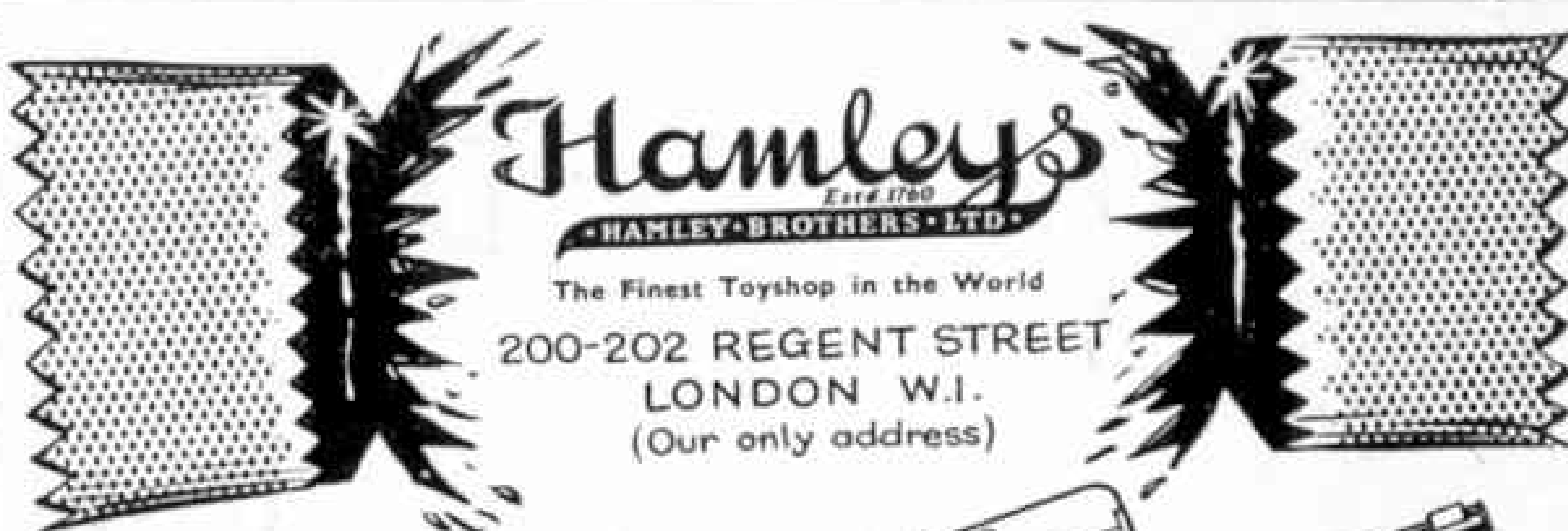
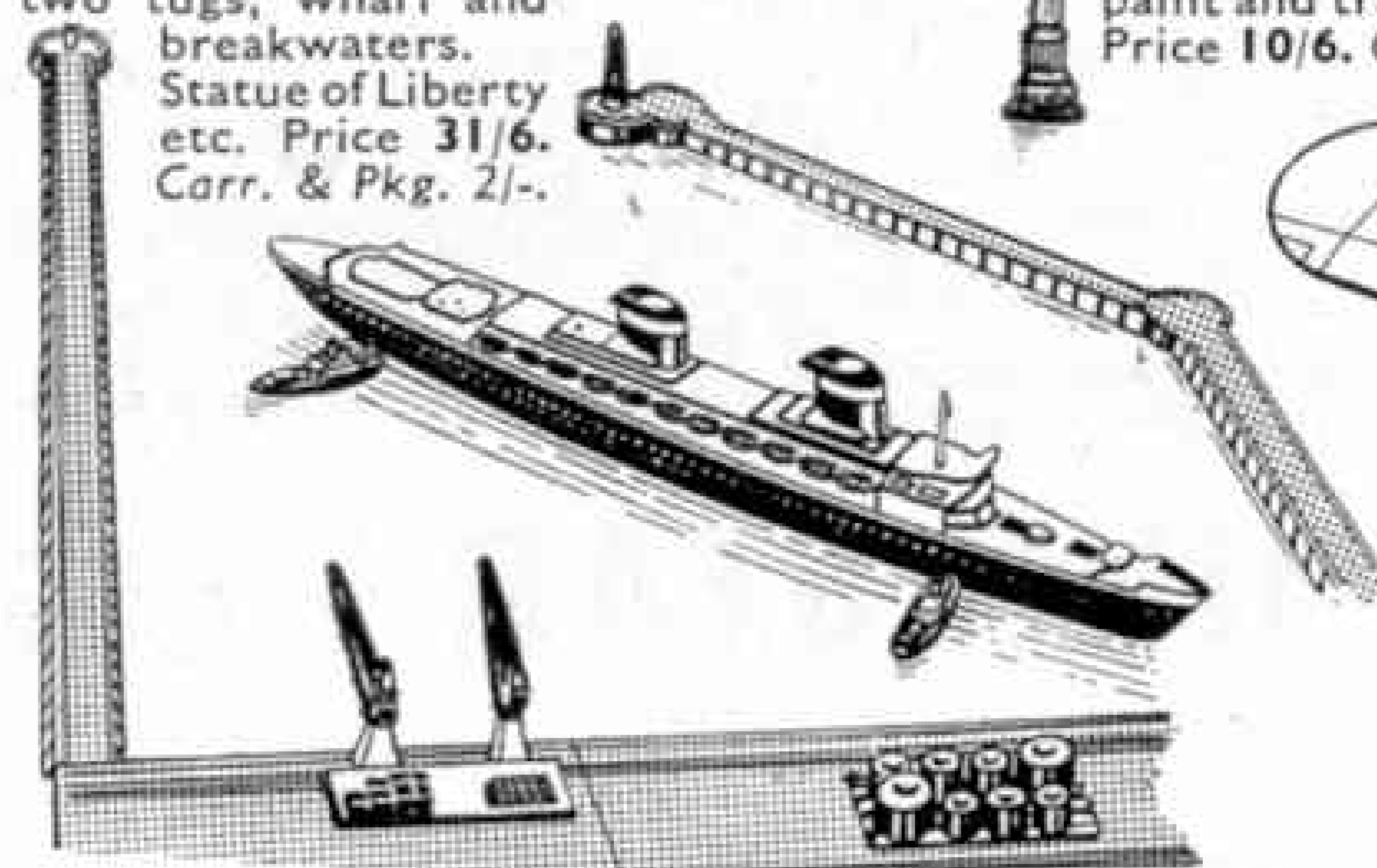
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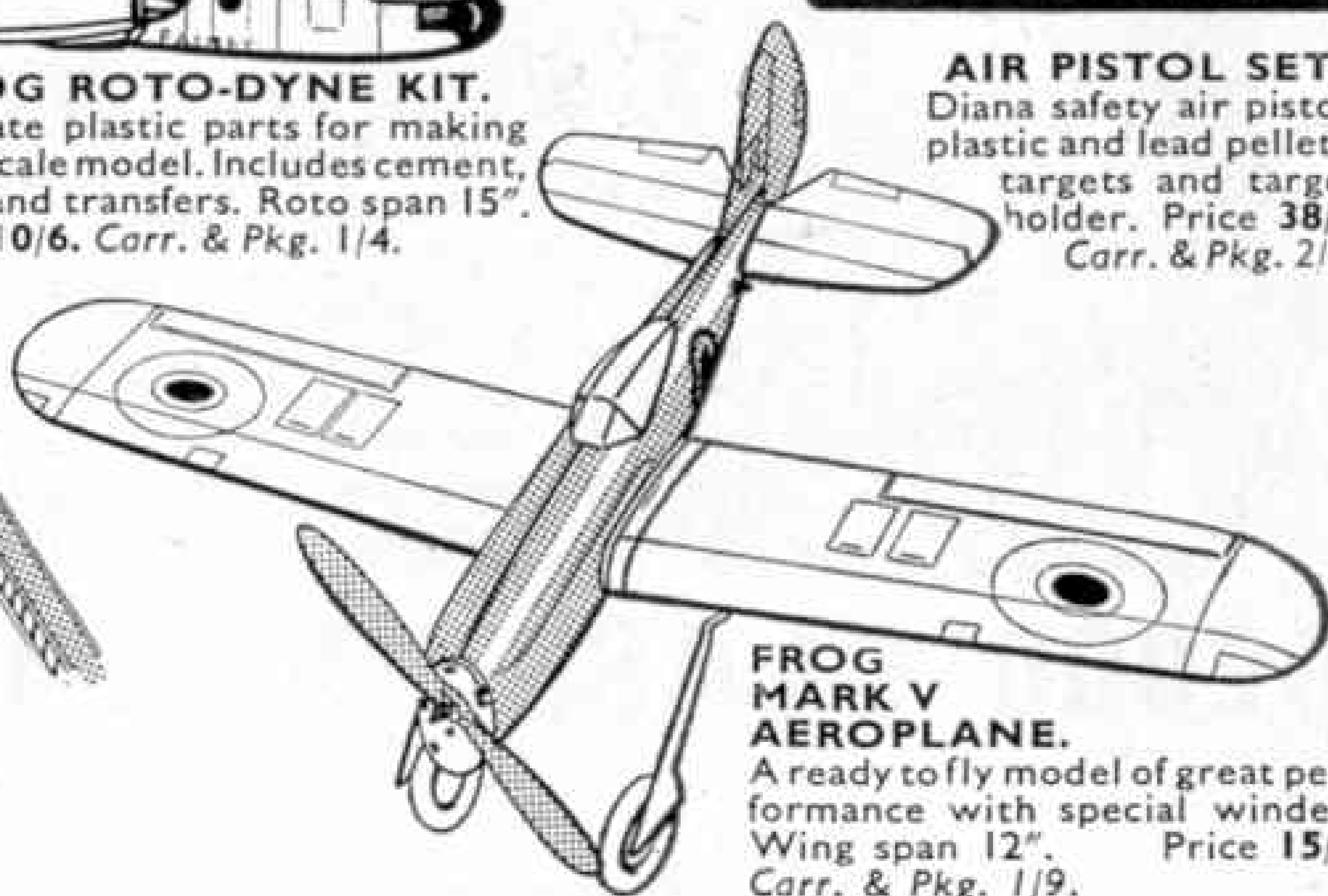
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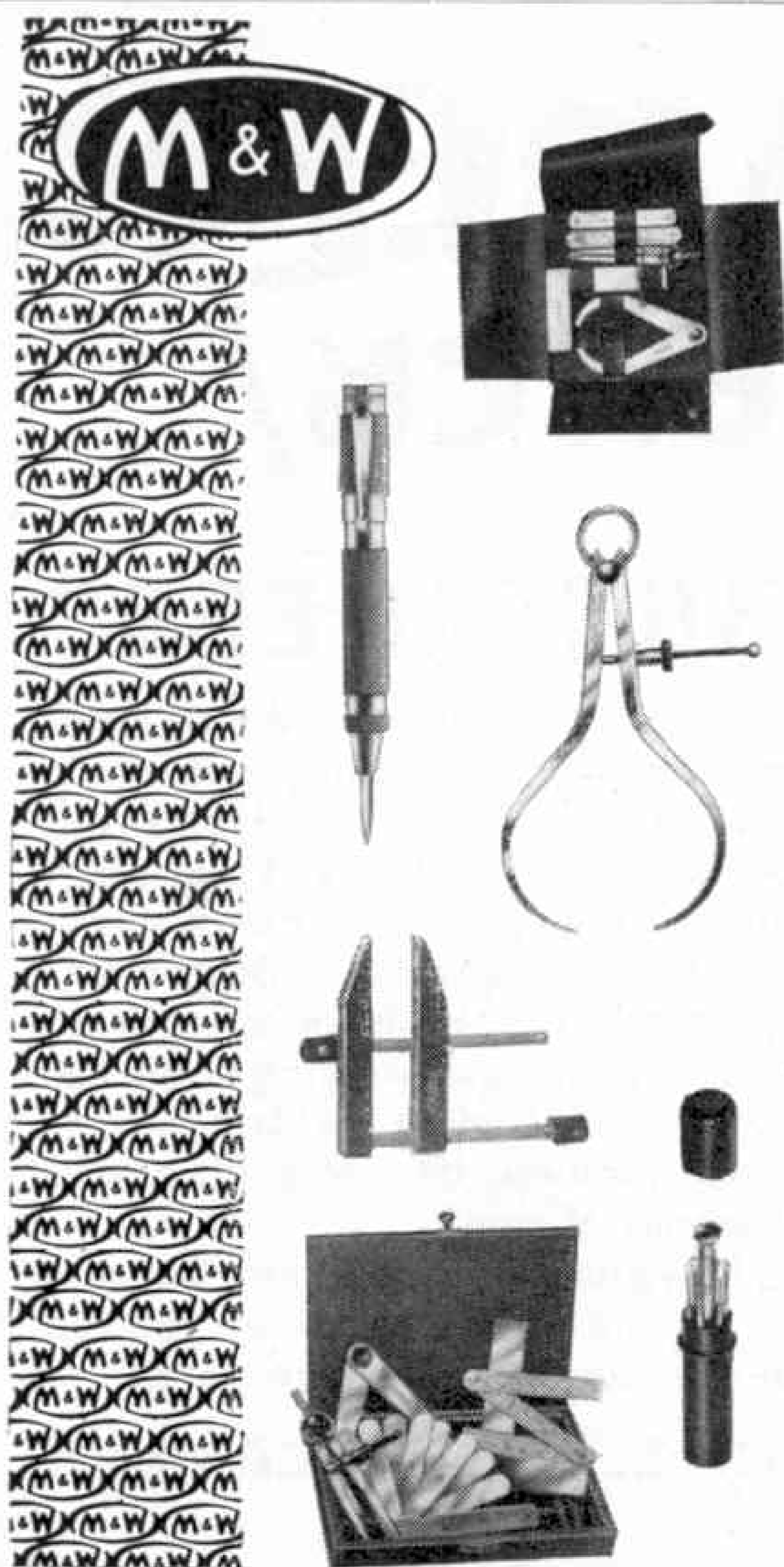
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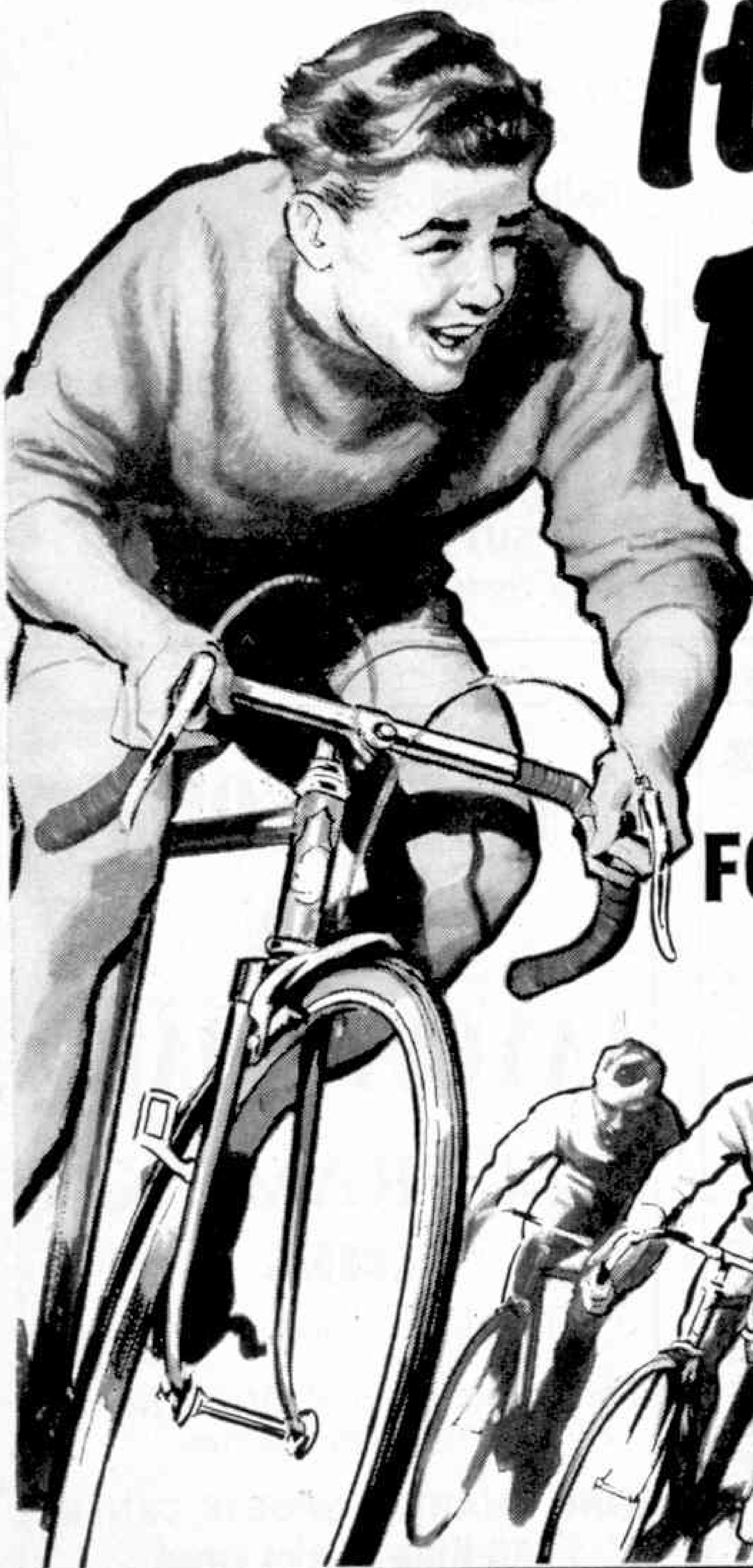
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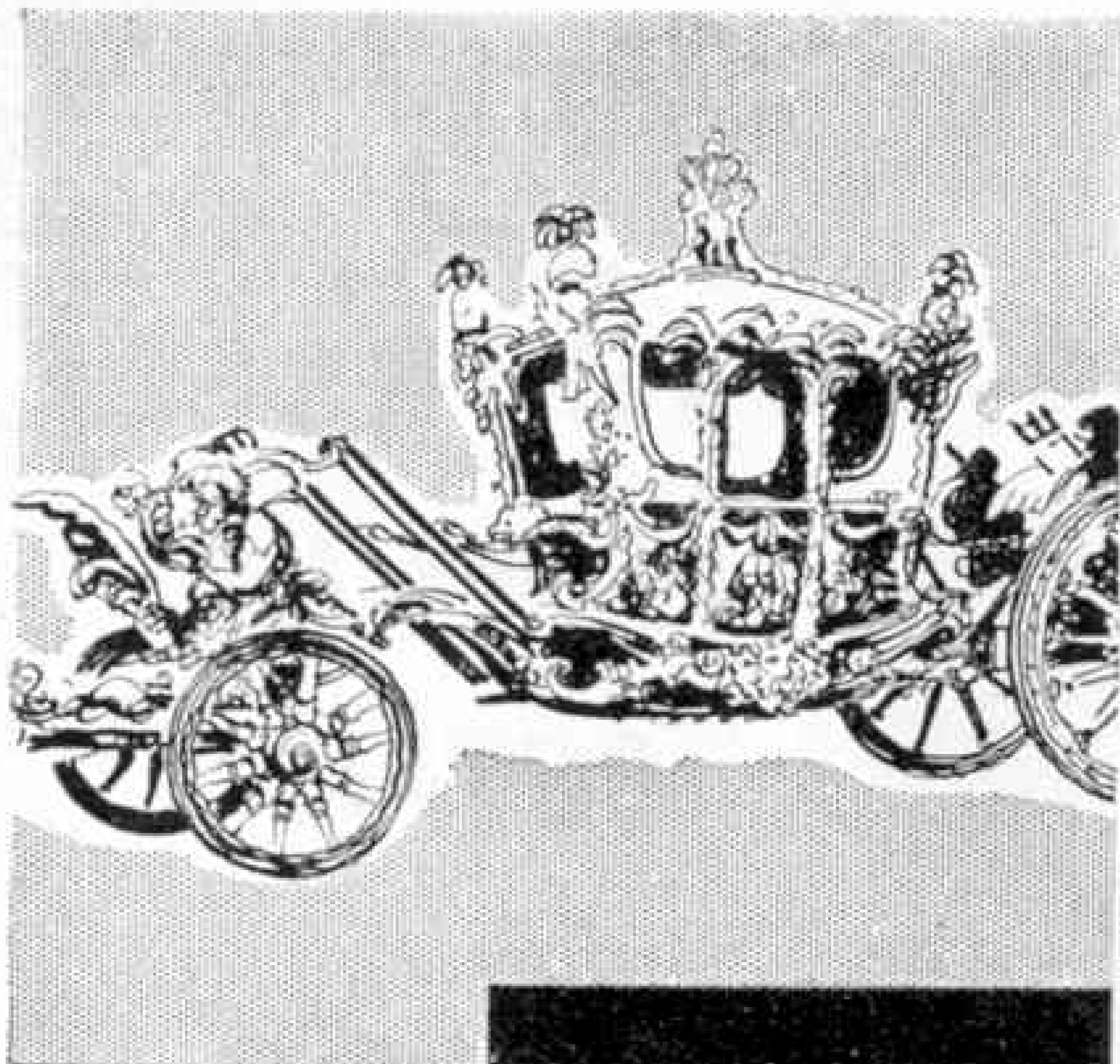
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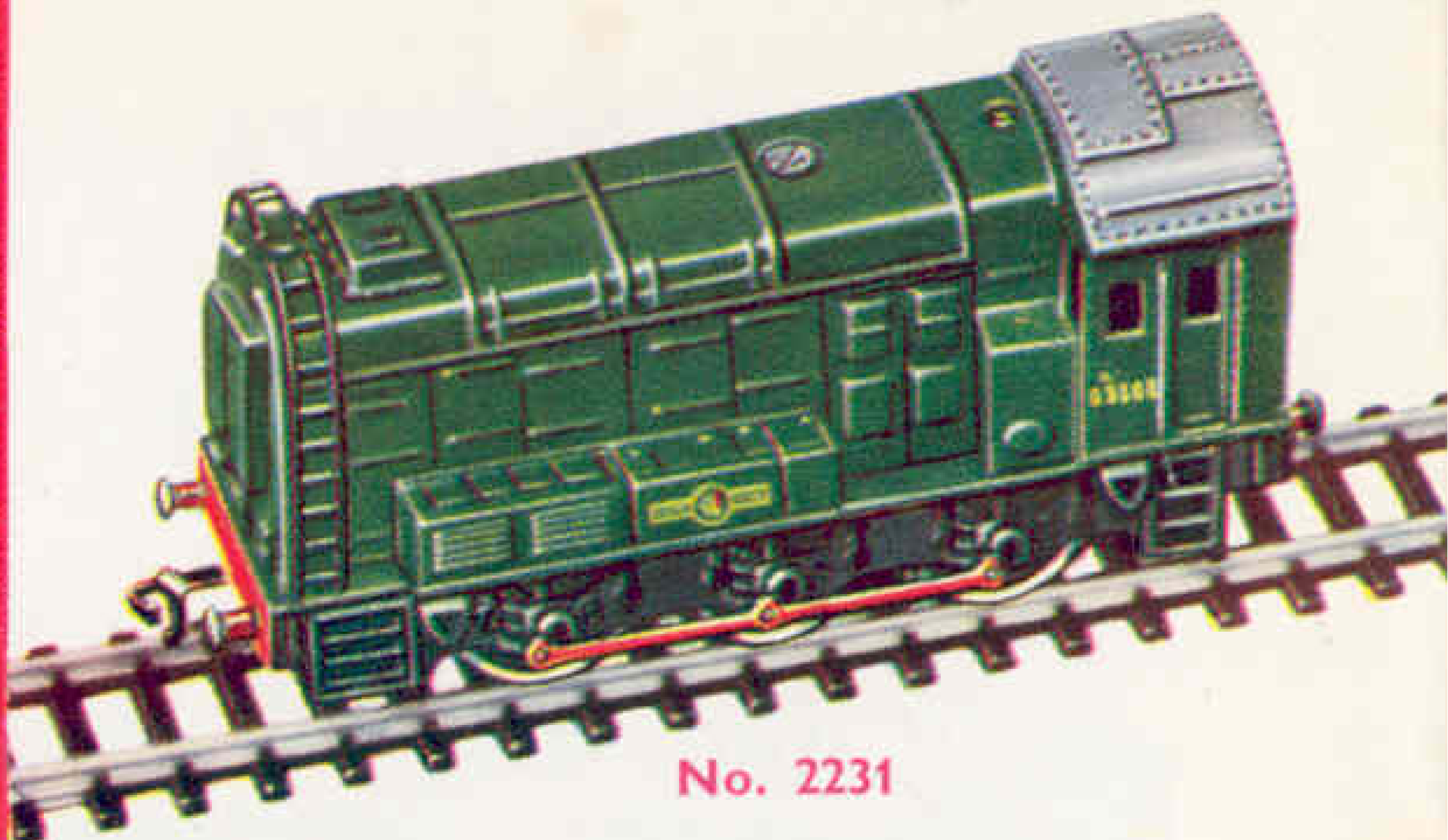
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